Geology, Exploration and Mining in British Columbia

1973

British Columbia Department of Mines and Petroleum Resources

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INTRODUCTION

The first Minister of Mines of the Province of British Columbia was appointed in 1874. One of his responsibilities was "the duty of collecting information on the subject of the mining industries of the Province." This material, which consisted of reports by the Gold Commissioners and Mining Recorders of the Province, was published in the Annual Report of the Minister of Mines.

A Bureau of Mines was established by Parliamentary authority in 1895 and in 1896 was staffed by a Provincial Mineralogist and an assayer and chemist. Technical reports on mines and mining activities were prepared by them and published in the Annual Report, together with reports contributed by the Mining Recorders and Gold Commissioners.

Over the years with the expansion of the mining industry, the staff of the Department of Mines grew, as did the number and size of the technical reports on geology and mining that were still published in the Annual Report of the Minister of Mines. Over a period of nearly 75 years the Annual Report became known as the authoritative record of mining in the Province.

However, in 1969, because of the size to which the Annual Report had grown, it was decided to publish all geological and technical reports on Metal Mining and Exploration, Placer, Structural Materials and Industrial Minerals, and Coal Mining and Exploration in a separate volume entitled *Geology, Exploration, and Mining in British Columbia*. Thus a new annual publication was initiated which, as a separate entity from the Annual Report, exists for the purpose of publishing geological and technical reports and of recording the exploration activity in the Province.

Each year the Annual Report of the Minister of Mines and Petroleum Resources is also published. It contains a general review of the mineral industry and chapters on Statistics, Departmental Work, Petroleum and Natural Gas, and Inspection of Mines.

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METAL MINES

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GENERAL REVIEW OF EXPLORATION AND METAL MINING

By Stuart S. Holland

PRODUCTION

The outstanding features of 1973 were the enormous increases in copper production and in the prices of copper, gold, and silver. As a consequence metal production in British Columbia reached a new record of $808,155,982 in 1973, an increase of $436,123,272 or 117.2 per cent. The main increase was in copper but there were important increases in production of gold, silver, zinc, and molybdenum.

METAL PRODUCTION OF BRITISH COLUMBIA, 1973

		1972		1973	
		Quantity	Value $	Quantity	Value $
METALS					
Antimony	lb.	679,601	419,042	1,660,331	1,192,118
Bismuth	lb.	93,820	324,617	2,851	13,058
Cadmium	lb.	695,650	1,759,995	810,779	2,951,236
Cobalt	lb.	155,739	155,739	40,907	117,403
Copper	lb.	467,012,694	209,403,822	714,648,946	594,830,904
Gold, placer	oz.	691	26,905	3,831	311,524
Gold, lode, fine	oz.	121,624	6,995,448	185,986	18,117,268
Iron concentrates	tons	1,256,308	11,642,379	1,568,912	12,906,063
Lead	lb.	194,249,571	28,896,566	186,680,656	30,400,945
Molybdenum	lb.	28,041,603	43,260,349	30,390,928	52,260,232
Nickel	lb.	3,240,483	4,601,486	2,467,472	3,775,232
Silver	oz.	6,926,036	11,519,660	7,681,514	19,712,301
Tin	lb.	351,043	473,908	304,727	597,265
Tungsten (WO_3)	lb.	1,273,196	2,167,663	1,411,800	4,243,759
Zinc	lb.	268,347,996	47,172,894	302,874,331	62,564,751
Others –					
Mercury, indium, rhenium			3,212,297		4,161,923
TOTALS			372,032,770		808,155,982

Gold production increased in both quantity and value, the increase in quantity being a by-product to the increased copper production. The average price per fine ounce of gold increased from $57.52 in 1972 to $97.41 in 1973. Small-scale placer mining was stimulated and there was increased production of placer gold. During the year the average price per ounce of silver increased from $1.66 in 1972 to $2.566 in 1973. The production of silver increased by 755,478 ounces because of the increased production by Granduc, Lynx, and Silver Queen (Nadina) mines.

The price of copper rose spectacularly during the year and as a consequence the average price per pound of copper increased from 44.8 cents in 1972 to 83.2 cents in 1973. Copper production again increased significantly in quantity by 247,636,252 pounds or 53.0 per cent and by $385,427,082 or 184.1 per cent. Copper continues to be the most important metal produced in the Province, contributing 73.6 per cent of the total value.

The gain in copper production resulted from a full year's operation by the Gibraltar, Lornex, Similkameen (Ingerbelle), and Bell (Newman) mines which had come into production at various times in 1972.

During the year the average price per pound of lead rose from 14.88 cents in 1972 to 16.285 cents in 1973. Total value of production increased by 5.2 per cent despite a decrease in quantity of production of 3.9 per cent, mostly because of reduced production by Sullivan and Silmonac mines.

During the year the average price per pound of zinc increased from 15.58 cents to 20.657 cents in 1973. Increased quantity of production combined with the higher price resulted in an increase in value of $15,391,857 or 32.6 per cent to $62,564,751. Production from Lynx, Sullivan, HB, and Silver Queen (Nadina) were all higher than last year. Zinc maintained its position as the Province's second most valuable metal.

Molybdenum, the third most important metallic product, increased both in quantity and value from $43,260,349 in 1972 to $52,260,232 in 1973, a gain of 20.8 per cent. The average price received per pound of molybdenum increased from $1.54 in 1972 to $1.72 in 1973 because a greater proportion of metal was sold as molybdic oxide.

Rhenium was produced for the first time in the Province in 1973 as a by-product of roasting the molybdenite concentrates from Island Copper mine near Port Hardy.

It is anticipated that the total value of metal production should increase further in 1974. The possibility of a slight decline in quantity of copper produced should be more than compensated by a higher average price and higher average prices for all the other major metals are anticipated.

PROVINCIAL REVENUE FROM MINING COMPANIES

Direct revenue to the Provincial Government derived in 1973 from the mining sector of the mineral industry was as follows:

Free miners' certificates, recording fees, lease rentals, assessment payments, etc.	$1,863,859.29
Royalties on iron concentrates	156,292.47
Rentals and royalties on industrial minerals and structural materials	386,606.27
Fifteen per cent mining tax (received during 1973)	6,071,613.00
Coal licences	453,094.31
TOTAL	$8,731,465.34

EXPENDITURE BY MINING COMPANIES

Major expenditures in 1973 by companies involved in the exploration, development, and mining of metals, minerals, and coal were as follows:

Capital expenditures	$47,219,771	
Exploration and development	56,689,505	$103,909,276
Mining operations (metals, minerals, coal)		292,657,005
Mining operations (structural materials)		23,421,523
Repair expenditures		87,277,356
TOTAL		$507,265,160

MINING

In 1973, 91,753,846 tons of ore from 66 mines was mined and subsequently was concentrated or shipped directly to a smelter. This represents an increase in tonnage of 46.8 per cent over 1972. Fifteen mines, of which 11 were open-pit mines, produced more than 1 million tons each and eight mines, of which two were open-pit mines, produced between 100,000 and 1,000,000 tons each. The 13 open-pit mines produced 81,875,246 tons of ore or 89.2 per cent of the total tonnage of ore mined.

During the year Noranda Mines, Limited in December reopened their Boss Mountain molybdenum mine which had been closed since December 1971; Cominco Ltd. reopened their HB zinc-lead mine which had been closed since November 1966; Consolidated Churchill Copper Corporation Ltd. reopened their Magnum copper mine which had been closed since October 1971; and Consolidated Columbia River Mines Ltd. reopened the Ruth Vermont mine which had been closed since June 1971.

During the year mining operations were terminated by Placid Oil Company at their Bull River copper mine at Wardner; by Canex Placer Limited (Tungsten Division) at their Invincible and East Dodger tungsten mines at Iron Mountain; by the Bradina Joint Venture at the Silver Queen (Nadina) mine at Owen Lake; and by King Resources Company at their Mount Copeland molybdenum mine near Revelstoke.

CONCENTRATING

In 1973, 33 concentrators were in operation: nine treated copper ore, three treated copper-iron ore, five treated copper-molybdenum ore, one treated molybdenum ore, one treated nickel-copper ore, two treated silver-lead-zinc-copper ore, ten treated silver-lead-zinc ore, one treated tungsten ore, and one treated mercury ore.

SMELTING

The only base-metal smelter in operation in the Province is owned and operated by Cominco Ltd. at Trail. From mines in British Columbia it received 143,050 tons of lead concentrates, 227,438 tons of zinc concentrates, and 8,174 tons of crude ore. The company's own mines (Sullivan and HB) contributed 131,100 tons of lead concentrates and 225,906 tons of zinc concentrates. Other mines in the Province contributed 11,950 tons of lead concentrates and 1,533 tons of zinc concentrates which were treated on a custom basis. In addition the smelter also treated a large tonnage of ore, concentrates, and scrap from sources outside the Province; the company's Pine Point mine on Great Slave Lake was a large contributor.

Products exported to American smelters were: copper concentrates, 37,291 tons; lead concentrates, 4,223 tons; zinc concentrates, 41,162 tons; iron concentrates, 210,661 tons; and tungsten concentrates, 803 tons. The value of these products was $38.79 million. It represents about 4.8 per cent of its value of the 1973 metal production of the Province.

	1968	1969	1970	1971	1972	1973
Exploration expenditure*	$35,000,000	$44,400,000	$46,400,000	$39,100,000	$38,200,000	$37,300,000
Number of properties*	389	422	481	407	389	352
Average exploration expenditure per property	89,974	105,161	96,361	95,945	98,226	106,072
Claims recorded	60,384	84,665	69,546	57,778	78,901	35,659
Certificates of work	66,229	88,954	118,633	106,704	97,573	128,641
Free miners' certificates –						
Individual	9,305	9,880	10,034	9,351	9,032	7,084
Companies	761	1,060	911	930	927	563
Average copper price (cents per pound)	54.2	66.7	58.7	46.7	44.8	83.23

*From returns to Economics and Planning Division, Department of Mines and Petroleum Resources.

Products exported to Japanese smelters were: copper concentrates, 1,214,598 tons; zinc concentrates, 32,647 tons; nickel-copper concentrates, 6,764 tons; iron concentrates, 1,291,478 tons; and tungsten concentrates, 283 tons. The value of these products was $603.69 million, an increase of $392.1 million from 1972. It represents about 74.7 per cent of the 1973 metal production of the Province.

DEVELOPMENT

Statistical returns from mining companies indicate that in 1973 there was no expenditure by companies in preproduction development of new metalliferous mines. Work was undertaken by the following companies to rehabilitate and to reopen their formerly productive mines which had closed in the recent past:

Noranda Mines, Limited – Boss Mountain mine
Cominco Ltd. – HB mine
Consolidated Churchill Copper Corporation Ltd. – Magnum mine
Consolidated Columbia River Mines Ltd. – Ruth Vermont mine
Dankoe Mines Ltd. – Horn Silver mine

EXPLORATION AND PROSPECTING

Indicators of prospecting activity and exploration on metalliferous properties for 1973 and the past several years are shown by the tabulated statistics on page 16.

The amount of money spent on exploration in 1973 was down only slightly (2.3 per cent) from the previous year but the reduction in number of properties explored means that the average amount spent on each property was up slightly.

The number of mineral claims located in 1973 declined significantly by 43,242 claims or 54.8 per cent from 78,901 in 1972 to 35,659 in 1973. Most activity was at the head of the Sustut River where copper mineralization in volcanic rocks received a considerable amount of attention.

About 715 geological, geochemical, and geophysical reports were accepted in 1973 by the Department for assessment work credit. They represent not less than $4.6 million in work done on claims.

Information provided by exploration companies to the Geological Division on questionnaires mailed to them yearly is the basis of much of the text and enables a reasonably complete coverage of activities to be provided. The cooperation of the Industry is a valued asset and is very much appreciated. Exploration information is summarized in the following table.

SUMMARY OF INFORMATION FROM GEOLOGICAL DIVISION QUESTIONNAIRES, ASSESSMENT REPORTS, AND MINES INSPECTORS' REPORTS

NTS	Number of Properties	Type of Work								
		Geological Mapping	Geophysical Surveys	Geochemical Surveys	Physical		Drilling			
					Surface	Underground	Surface Diamond (Ft.)	Underground Diamond (Ft.)	Rotary (Ft.)	Percussion (Ft.)
82/SE	7	4	—	2	1	—	4,212	—	370	--------
82/SW	86	36	8	19	6	11	30,876	4,505	734	7,361
82/NW	52	29	—	19	11	9	14,511	—	—	--------
82/NE	—	—	—	—	—	—	—	—	—	--------
83/SE	—	—	—	—	—	—	—	—	—	--------
92/SE	114	46	58	56	7	1	37,456	—	—	16,387
92/SW	28	10	10	10	8	6	125,489	27,309	—	--------
92/NW	33	17	15	17	4	—	4,328	—	2,536	--------
92/NE	182	56	89	69	15	2	175,257	3,570	—	128,060
93/SE	39	13	14	16	7	—	22,268	1,091	—	19,560
93/SW	23	4	9	10	4	—	30,975	—	—	3,740
93/NW	92	35	49	40	12	3	102,365	11,742	1,600	28,330
93/NE	1	1	1	1	—	—	—	—	—	--------
94/SE	32	20	4	26	—	—	17,218	—	—	--------
94/SW	72	47	25	50	11	—	16,555	—	—	500
94/NW	4	2	1	2	—	—	198	—	—	--------
103/SE	4	1	2	3	—	—	—	—	—	--------
103/NE	15	5	1	2	5	—	5,864	—	—	--------
104/SE	21	10	7	7	3	1	54,423	35,498	—	3,012
104/NW	6	2	3	2	1	—	500	—	—	--------
104/NE	14	11	7	8	3	1	13,374	—	—	--------
114/NE	2	—	—	1	1	—	—	—	—	--------
Totals	827	349	303	360	99	34	693,325	83,715	6,840	206,950

The number of properties not in production on which major exploration programmes were undertaken was 27, considerably more than in 1972. Major programmes, namely more than 10,000 feet of drilling or more than 1,000 feet of underground development, were carried out at the following properties (see body of the report for details):

Afton near Kamloops
Amy near Tootsee Lake
Axe on Summers Creek
Berg near Kidprice Lake
Bralorne mine near Lillooet
Chappelle near Thutade Lake
Eagle east of Dease Lake

Fish Lake near Taseko Lakes
Han, Fir near Endako
Homestake mine near Skwaam Bay
Huckleberry near Sweeney Lake
Iron Mask near Kamloops
Joem at Mount Haskin near Cassiar
Mosquito at Wells
Motherlode at Greenwood
Peach, Pit northeast of Lac la Hache
Price mine at Buttle Lake
Rainbow near Kamloops
Reko near Port Renfrew
Rey near Merritt
Robb Lake at the head of Halfway River
Sam Goosly south of Houston
Stikine Copper at Galore Creek
Sustut Copper at the head of Sustut River
Thezar near Topley Landing
Vollaug on Table Mountain near Cassiar
Warman (Northair) near Alta Lake

The areal distribution of exploration work on metallic mineral properties in 1973 and 1972 can be compared by referring to the two maps of the Province (Figs. 1 and 2). Development of this type of map is explained in the *Western Miner,* April 1972, pages 28 to 30. The percentage figures refer to the number of active properties per unit area but for the purposes here are used to illustrate a gradation of activity.

Comparison of the two figures shows a general similarity in the two years of the distribution of exploration activity but also shows changes in detailed distribution. In 1973 work in northern British Columbia was less dispersed and showed a greater concentration of activity in the Robb Lake, Sustut, and Hogem areas and less activity in the Smithers area and the Stikine Basin. In the south were was a greater concentration of activity in the Guichon Creek batholith and between Clearwater and Quesnel Rivers and a general contraction of areas elsewhere.

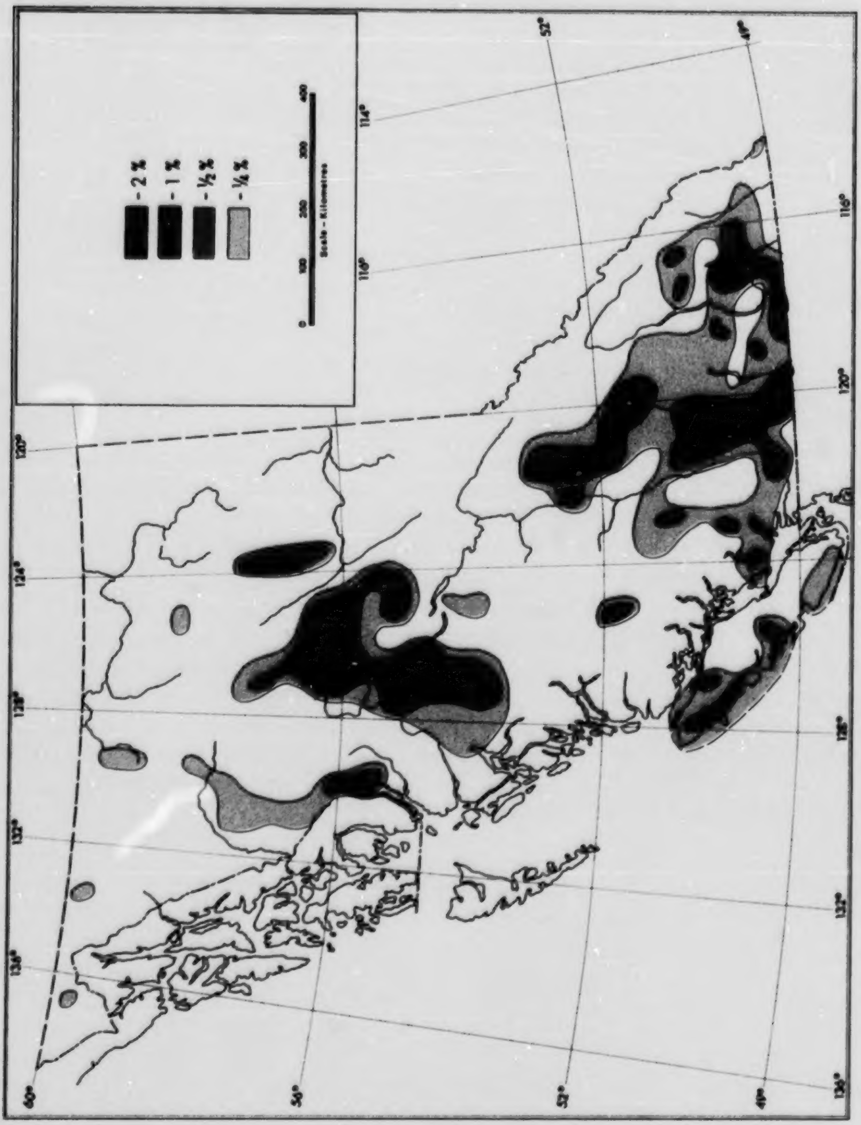
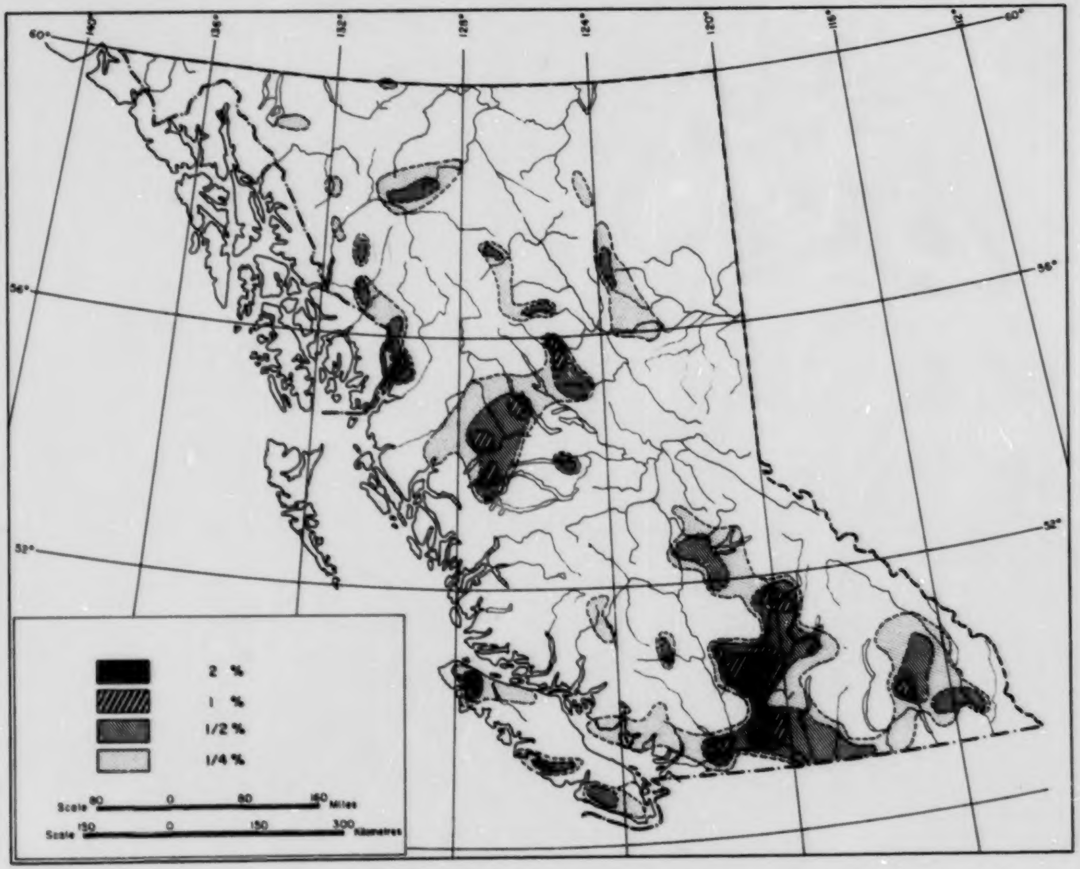

- 2 %
- 1 %
- ½ %
- ¼ %
0
100
200
300
400
Scale - Kilometres
60°
56°
52°
49°
120°
124°
128°
132°
136°
114°
116°
118°

Figure 1. Distribution of metallic mineral properties active in 1973.



140°
136°
132°
128°
124°
120°
116°
112°
60°
56°
52°
2 %
1 %
1/2 %
1/4 %
Scale 80 0 80 160 Miles
Scale 150 0 150 300 Kilometres

Figure 2. Distribution of metallic mineral properties active in 1972.

TABLE 1 — METAL PRODUCTION, 1973

Property or Mine	NTS	Mining Division	Location of Mine	See Page	Owner or Operator	Ore Shipped ore Treated	Product Shipped	Gross Metal Contents					
								Gold	Silver	Copper	Lead	Zinc	Cadmium
						Tons		Oz.	Oz.	Lb.	Lb.	Lb.	Lb.
Burnt Basin	82E/1E	Greenwood	Paulson	36	Donna Mines Ltd.	164	Crude ore.	34	42	—	583	328	—
Phoenix mine	82E/2E	Greenwood	Phoenix	38	The Granby Mining Co. Ltd., Phoenix Copper Division	1,003,815	Copper concentrates, 18,788 tons.	17,781	100,882	9,975,337	—	—	—
Providence	82E/2E	Greenwood	Greenwood	41	W.E. MacArthur, Greenwood	53	Siliceous ore from dump.	8	593	84	534	321	—
Smuggler	82E/4E	Osoyoos	Fairview	—	K.G. Evers, Okanagan Falls	20	Crude ore.	8	24	—	40	78	—
Susie	82E/4E	Osoyoos	Oliver	43	Hem Mines Ltd.	2,788	Crude ore.	284	5,704	—	14,274	7,388	—
Mars (Torras)	82E/4E	Osoyoos	Oliver	44	Topper Mining Ltd.	44	Siliceous ore.	2	28	—	178	88	—
Fur, Flo (Dearn)	82E/6E	Greenwood	Beaverdell	47	Argentia Mines Ltd.	80	Crude ore.	27	119	—	238	119	—
Highland Bell mine	82E/6E	Greenwood	Beaverdell	48	Teck Corp. Ltd.	37,200	Lead concentrates, 1,020 tons; zinc concentrates, 318 tons; jig concentrates, 112 tons.	417	489,883	1,187	487,724	463,047	1,920
H B Mine	82F/3E	Nelson	Salmo	57	Cominco Ltd.	351,882	Lead concentrates, 4,418 tons; zinc concentrates, 24,250 tons.	28	42,196	—	6,185,800	28,525,800	209,008
Invincible, East Dodger	82F/3E	Nelson	Salmo, Iron Mountain	54	Canex Placer Ltd., Tungsten Division	106,763	Tungsten concentrates, 1,088 tons containing 1,411,800 lb. of tungsten (WO_3).	—	—	—	—	—	—
Nugget	82F/3E	Nelson	Salmo	58	S.A. Endersby, White Rock	848	Siliceous ore from tailings.	161	144	—	1,457	1,298	—
Reno	82F/3E	Nelson	Salmo	58	S.A. Endersby, White Rock	138	Siliceous ore from dump.	38	14	—	270	275	—
Annex	82F/3W	Nelson	Nelway	59	Reeves MacDonald Mines Ltd.	181,438	Lead concentrates, 4,207 tons; zinc concentrates, 14,127 tons.	—	189,543	—	5,841,590	15,748,032	161,477
Blue Bird	82F/4W	Trail Creek	Rossland	60	Standonray Mines Ltd.	487	Crude ore.	72	7,472	—	40,742	56,809	—
I X L	82F/4W	Trail Creek	Rossland	60	J.A. Ruelle, Rossland	26	High-grade ore.	87	31	—	52	52	—
Midnight	82F/4W	Trail Creek	Rossland	61	Consolidated Cirola Mines Ltd.	219	Crude ore.	131	77	—	879	866	—
Golden Age, Euphrates	82F/6E	Nelson	Nelson	65	Robert Mines Ltd.	88	Test shipment.	7	101	236	241	241	—
Goodenough	82F/6E	Nelson	Ymir	64	E.B. Carlson, L. Masura, P. Marchinek, Trail	44	Test shipment of siliceous ore.	2	110	—	2,284	2,020	—
Ymir	82F/6E	Nelson	Ymir	64	A.M. Gerun, Nelson Lessee	49	Crude ore from dump.	11	59	20	489	489	—
Rice (Quartz Mountain)	82F/9E	Fort Steele	Sawmill Creek	68	Peter Lane, Cranbrook	1,373	Crude ore.	352	275	2,383	5,738	2,746	—

Sullivan mine	82F/9E	Fort Steele	Kimberley	67	Cominco Ltd.	2,214,415	Lead concentrates, 126,684 tons; zinc concentrates, 201,668 tons; tin concentrates, 161 tons containing 180,783 lb. of tin; iron sinter, 14,287 tons.	152	3,181,073	618,200	187,884,000	207,250,000	551,462
Silver Hoard, Dellie, Little May	82F/10W	Slocan	Ainsworth	72	R.B. Savage, Taghum	881	Crude ore.	1	3,885	—	9,285	20,223	—
Enterprise	82F/14W	Slocan	Slocan City	75	L.M. Fried, New Denver	67	Crude ore.	—	1,917	—	17,836	24,185	—
Freddy	82F/14W	Slocan	Silverton	77	V. Hansen, New Denver	33	Crude ore.	2	1,038	—	284	132	—
Little Tim (V-Day)	82F/14W	Slocan	Slocan City	78	Wayne Turley, Kaslo	2	Crude ore.	—	389	31	480	320	—
Marmion, Maryland	82F/14W	Slocan	Slocan City	73	M.R. Mase, Castlegar	7	Crude ore.	4	14	—	56	28	—
Mary	82F/14W	Slocan	Enterprise Creek	74	S. Barisoff, Silverton	14	Crude ore.	5	143	—	1,833	291	—
Ottawa	82F/14W	Slocan	Springer Creek	73	Mike Posnikoff, Slocan City	28	Crude ore.	—	8,620	—	307	128	—
Silmonac (Minniehaha)	82F/14W	Slocan	Sandon	78	Kam-Kotia and Burkam Joint Venture	13,948	Lead concentrates, 1,172 tons; zinc concentrates, 1,133 tons.	—	190,133	—	1,436,333	1,398,171	9,533
Victor (Violamac)	82F/14W	Slocan	Sandon	79	E. Petersen, New Denver	30	Crude ore.	6	3,478	—	41,127	1,088	—
Bluebell	82F/15W	Slocan	Riondel	–	D. Pearce, Nelson	—	Lead concentrates, 68 tons; salvage from Kootenay Bay.	—	489	—	41,432	5,832	—
Nor	82F/15W	Slocan	Ainsworth	81	H. McGowan, Ainsworth	74	Crude ore.	—	522	—	863	1,564	—
Bull River mine	82G/11W	Fort Steele	Wardner	84	Placid Oil Co.	206,812	Copper concentrates, 14,423 tons.	1,788	88,882	7,214,088	—	—	—
Best	82K/3E	Slocan	New Denver	89	Thomas Eccles, Trail	10	Crude ore.	—	145	—	416	250	—
Dublin Queen	82K/3E	Slocan	New Denver	87	Fostall Mines Ltd.	8	Crude ore.	—	407	—	6,562	2,840	—
Washington	82K/3E	Slocan	Retallack, Three Forks	88	J.O.H. Nesbitt	17	Crude ore.	—	2,152	—	25,834	1,007	—
Mike	82K/11W	Revelstoke	Ferguson	98	H.A. McGowan Ferguson	2	Crude ore.	—	25	—	430	1,448	—
Silver Cup, Towser	82K/11W	Revelstoke	Ferguson	35	Pandora Management Ltd.	440	Crude ore.	68	9,086	—	29,012	23,368	—
Ruth Vermont	82K/15W	Golden	Parson	96	Consolidated Columbia River Mines Ltd.	28,957	Lead concentrates, 1,161 tons; zinc concentrates, 1,134 tons.	48	96,106	21,850	1,440,828	1,218,042	8,058
St. Paul	82L/1W	Vernon	Monashee Mountain	98	W. Miller, Vernon	19	Silver concentrates, 5 tons; crude ore, 14 tons.	21	434	—	894	153	—
Chapus	82L/7W	Vernon	Lumby	–	Alberta Gypsum Ltd.	6	Mill salvage.	—	282	—	477	432	—
Mount Copeland mine	82M/1W	Revelstoke	Revelstoke	104	King Resources Co.	21,781	Molybdenite concentrates, 271 tons containing 301,471 lb. of molybdenum.	—	—	—	—	—	—
Mosquito King, Ex	82M/4E	Kamloops	Adams Plateau		Consolidated Giant Metallics Ltd.	220	Lead concentrates, 18 tons; zinc concentrates, 11 tons.	—	728	—	17,453	13,386	93

TABLE 1 – METAL PRODUCTION, 1973 (continued)

Property or Mine	NTS	Mining Division	Location of Mine	See Page	Owner or Operator	Ore Shipped or Treated	Product Shipped	Gross Metal Contents					
								Gold	Silver	Copper	Lead	Zinc	Cadmium
						Tons		Oz.	Oz.	Lb.	Lb.	Lb.	Lb.
Sunro mine	92C/5E	Victoria	River Jordan	225	Jordan River Mines Ltd.	273,628	Copper concentrates, 8,137.	943	10,220	4,387,828	--	--	--
Texada mine	92F/10E	Nanaimo	Texada Island	233	Texada Mines Ltd.	1,029,180	Iron concentrates, 520,022 tons; copper concentrates, 9,716 tons.	1,897	58,590	4,532,996	--	--	--
Lynx and Myra mines	92F/12E	Alberni	Buttle Lake	236	Western Mines Ltd.	384,240	Copper concentrates, 10,181 tons; lead concentrates, 8,334 tons; zinc concentrates, 47,780 tons.	22,326	1,329,980	7,506,707	8,388,068	55,971,577	220,576
Britannia mine	92G/11E	Vancouver	Howe Sound	239	Anaconda Canada Ltd.	548,801	Copper concentrates, 25,216 tons.	--	102,913	14,984,100	--	--	--
Pride of Emory mine	92H/5E, 6W	New Westminster	Hope	131	Giant Mascot Mines Ltd.	352,758	Nickel-copper concentrates, 14,748 tons containing 2,803,946 lb. of nickel and 40,997 lb. of cobalt.	--	--	1,880,057	--	--	--
Goldrop	92H/7E	Similkameen	Whipsaw Creek	—	Robert Dealy, Oliver	287	Crude ore.	113	1,090	--	1,509	613	—
Similkameen mine (Ingerbelle)	92H/7E	Similkameen	Princeton	132	Similkameen Mining Co. Ltd.	6,355,829	Copper concentrates, 76,448 tons.	28,942	133,838	41,802,628	--	--	--
Brenda mine	92H/16E	Osoyoos	Brenda Lake	163	Brenda Mines Ltd.	8,867,895	Copper concentrates, 82,985 tons; molybdenite concentrates, 9,837 tons containing 11,105,912 lb. of molybdenum.	3,407	250,628	34,098,086	--	--	--
Craigmont mine	92I/2W	Nicola	Merritt	155	Craigmont Mines Ltd.	1,429,568	Copper concentrates, 66,102 tons; iron concentrates, 38,799 tons.	--	--	38,606,663	--	--	--
Lornex mine	92I/6E	Kamloops	Highland Valley	169	Lornex Mining Corp. Ltd.	13,887,000	Copper concentrates, 164,414 tons; molybdenite concentrates, 6,315 tons containing 3,385,000 lb. of molybdenum.	763	431,000	102,180,000	--	--	--
Bethlehem mine	92I/7W	Kamloops	Highland Valley	170	Bethlehem Copper Corp. Ltd.	6,339,122	Copper concentrates, 114,951 tons.	--	176,000	73,301,000	--	--	--
Old Sport Mine	92L/6E	Nanaimo	Benson Lake	--	Coast Copper Co. Ltd.	—	Copper concentrates shipped from stockpile, 3,885 tons. Mine ceased production in 1972.	1,028	7,088	1,776,880	--	--	--
Island Copper mine	92L/12E	Nanaimo	Port Hardy	260	Utah Mines Ltd.	12,071,446	Copper concentrates, 228,104 tons; molybdenite concentrates, 1,185 tons containing 970,500 lb. of molybdenum. Rhenium shipments are confidential.	49,729	268,331	106,724,851	--	--	--
Providence	93A/11W	Cariboo	Blackbear Creek	--	Walt. Pederson Enterprise, St. Cloud, Minnesota	3	Crude ore.	--	142	--	1,388	6	--

Gibraltar mine	93B/9W	Cariboo	McLeese Lake	286	Gibraltar Mines Ltd.	15,082,233	Copper concentrates, 217,484 tons; molybdenite concentrates, 412 tons containing 483,536 lb. of molybdenum.	--	--	124,694,080	--	--	--
Endako mine	93K/3E	Omineca	Endako	330	Canex Placer Ltd. (Endako Mines Division)	8,446,000	Molybdenite concentrates, 3,098 tons; molybdenum trioxide, 7,905 tons; ferro-molybdenum, 1,015 tons containing 14,134,810 lb. of molybdenum.	--	--	--	--	--	--
Pinchi Lake mine	93K/9W	Omineca	Pinchi Lake	333	Cominco Ltd.	*	Mercury.	--	--	--	--	--	--
Silver Queen	93L/2E	Omineca	Houston	338	Bradina Joint Venture	98,278	Copper concentrates, 1,389 tons; zinc concentrates, 10,769 tons.	1,913	301,573	543,780	1,181,214	8,617,475	20,120
Cronin mine	93L/15W	Omineca	Smithers	347	Hallmark Resources Ltd.	2,000	Lead concentrates, 88 tons, zinc concentrates, 80 tons.	11	8,125	2,967	92,732	109,195	1,122
Granisle mine	93L/16E	Omineca	Babine Lake	351	Granisle Copper Ltd.	4,546,106	Copper concentrates, 56,844 tons.	16,676	178,448	39,565,757	--	--	--
Bell mine (Newman)	93M/1E	Omineca	Babine Lake	352	Noranda Mines ltd. (Bell Copper Division)	4,114,324	Copper concentrates, 76,200 tons.	24,888	--	38,026,490	--	--	--
Silver Standard mine	93M/5E	Omineca	Hazelton	357	George Braun, New Hazelton	130	Lead-zinc concentrates, 7 tons; crude ore, 80 tons.	12	7,009	--	15,848	23,463	--
Magnum mine	94K/11W	Liard	Delano Creek	478	Consolidated Churchill Copper Corp. Ltd.	--	Ore stockpiled, 13,471 tons.	--	--	--	--	--	--
Tasu mine	103C/16E	Skeena	Tasu Harbour	482	Wesfrob Mines Ltd.	1,781,379	Iron concentrates, 895,694 tons; copper concentrates, 16,308 tons.	3,010	110,128	7,488,880	--	--	--
Blue Grouse	103P/13W	Skeena	Stewart	–	John Lehto, Stewart	4	Crude ore.	--	--	--	--	--	--
Red Cliff mine	104A/4W	Skeena	Stewart	494	Adam Milling Ltd.	4,194[1]	--	--	--	--	--	--	--
Granduc mine	104B/1W	Skeena	Stewart	497	Granduc Operating Co.	2,797,948	Copper concentrates, 124,808 tons.	11,004	651,373	69,553,589	--	--	--

INTRODUCTION

The reports that form the body of this Chapter comprise a large number of brief tabulated summaries of information concerning known active properties and mines and a small number of detailed geological reports of properties, mines, and areas of mineral potential. The sources of information, organization of the report, locations, policy on names, and other Departmental publications during 1973 are discussed below.

SOURCES OF INFORMATION: (1) Geologists on the staff of the Geological Division, Mineral Resources Branch prepare reports on mineralized areas and mineral deposits for publication in *Geology, Exploration, and Mining in British Columbia*. These reports are concerned either with areas and properties under active exploration, recent mineral discoveries of importance, or are part of a more general study of mineralized areas which will form the body of a subsequent bulletin. The following substantial geological reports are included in this volume:

BEVELEY by J. A. Garnett
DWG COPPER by B. N. Church
GIBRALTAR MINE by A. Sutherland Brown
HARRISON, LUCKY JIM by D. E. Pearson
INVINCIBLE, EAST DODGER by R. I. Thompson
LORRAINE by J. A. Garnett
MARMOT by B. N. Church
MOUNT COPELAND MINE by W. J. McMillan
REY by W. J. McMillan
RIC by R. I. Thompson
SAM GOOSLY by B. N. Church
STIKINE COPPER by A. Panteleyev
SUSTUT AREA by B. N. Church
SUSTUT COPPER by B. N. Church
WARMAN (NORTHAIR) by D. E. Pearson

(2) A considerable amount of information in the following reports was supplied by exploration companies. Their cooperation in completing and returning exploration questionnaires for each of the properties on which they worked is gratefully acknowledged by the Department and should be greatly appreciated by all users of this report. In some instances this information is augmented by staff geologists or mine inspectors.

(3) Geological, geophysical, and geochemical reports accepted by the Department for credit as assessment work contain a large amount of valuable information. The results of work presented in assessment reports that were accepted by April 1, 1974 are summarized and published herein. The last report summarized is Assessment Report 4905. Assessment reports accepted after April 1, concerning properties for which exploration questionnaires have already been submitted to the Department, are entered as references on the property write-up until this manuscript is finalized for publication.

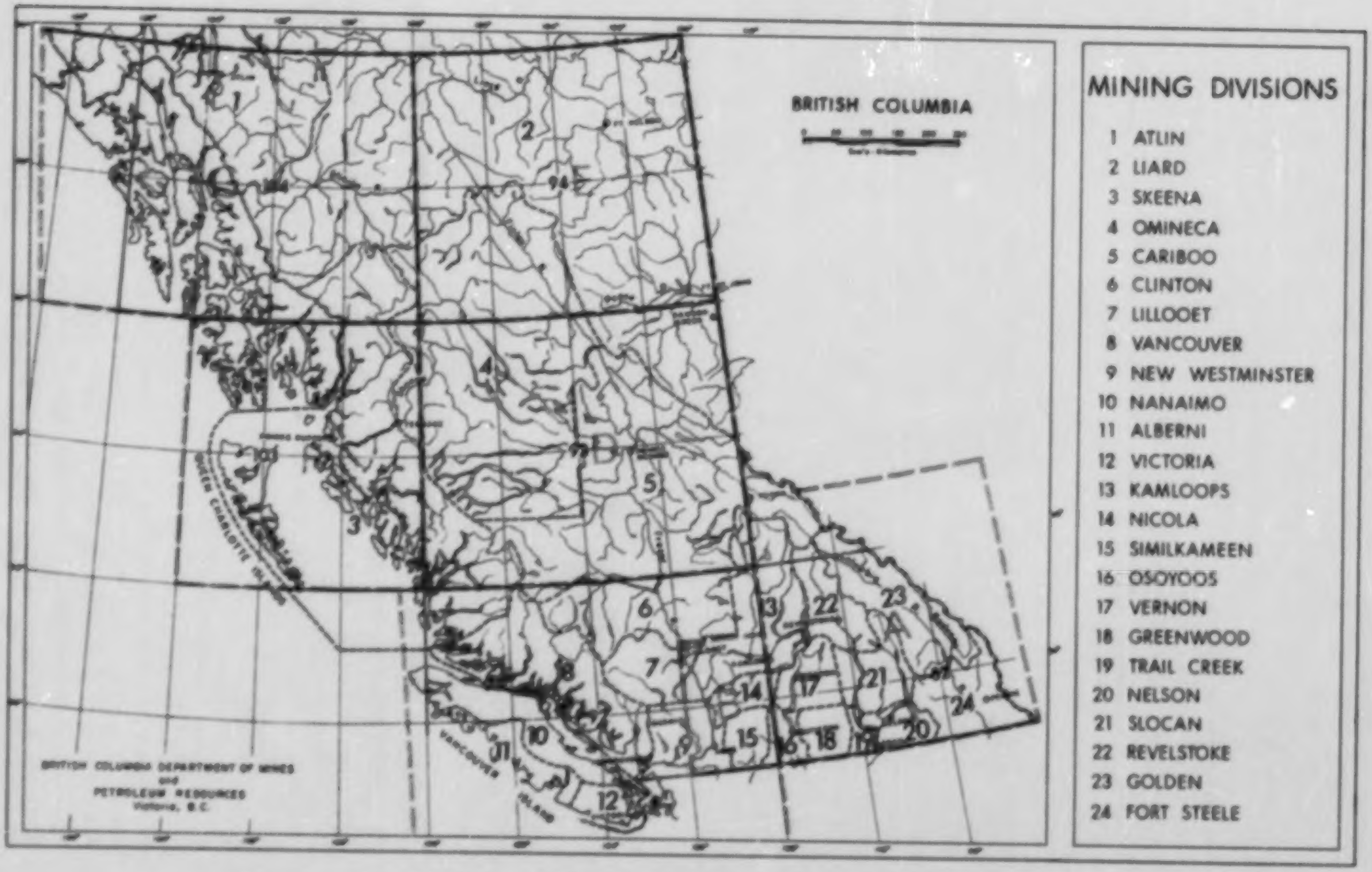

BRITISH COLUMBIA
MINING DIVISIONS
1 ATLIN
2 LIARD
3 SKEENA
4 OMINECA
5 CARIBOO
6 CLINTON
7 LILLOOET
8 VANCOUVER
9 NEW WESTMINSTER
10 NANAIMO
11 ALBERNI
12 VICTORIA
13 KAMLOOPS
14 NICOLA
15 SIMILKAMEEN
16 OSOYOOS
17 VERNON
18 GREENWOOD
19 TRAIL CREEK
20 NELSON
21 SLOCAN
22 REVELSTOKE
23 GOLDEN
24 FORT STEELE
QUEEN CHARLOTTE ISLANDS
VANCOUVER ISLAND
BRITISH COLUMBIA DEPARTMENT OF MINES
and
PETROLEUM RESOURCES
Victoria, B.C.

Figure 3. Index map of mining divisions and Figures A to G.

Reports accepted in 1973 for work done in 1972 are not summarized if the work was previously reported on exploration questionnaires. Because of this policy not all assessment reports appear as references.

Assessment reports are available for study or for duplication at cost one year after the date of their submission.

ORGANIZATION: The reports are arranged sequentially according to National Topographic System map designation. In the NTS designation, the whole of Canada is divided into primary quadrangles, each 4 degrees latitude by 8 degrees longitude. Each is described by a number, the last digit of which indicates latitude and the first one or two indicates longitude (for example, 104). British Columbia is covered by six of these primary quadrangles except for minor areas. Figure 3 locates index maps (Figs. A to G) used in this report. They coincide closely to the primary quadrangles: for example, Figure A includes quadrangle 82 and part of 83; Figure B, 92H and 92I; Figure C, 92 and part of 102; Figure D, 93; Figure E, 94; Figure F, 103; and Figure G, 104 and part of 114.

Each primary quadrangle is subdivided into 16 map-sheets, each 1 degree latitude by 2 degrees longitude, and described by letters A to P (for example, 104G) proceeding from the southeast corner to the west in the southern panel, then east to the next panel, and so on. Each lettered quadrangle is subdivided into 16 map-sheets, each 15 minutes latitude by 30 minutes longitude and numbered 1 to 16 in an analogous manner to the lettering (for example, 104G/7). Finally each sheet is halved east and west for maps of the 1:50,000 series and each is described, for example, 104G/7E and 104G/7W.

An index to published maps may be obtained by requesting Indexes 8 to 14 from the Department of Lands, Forests, and Water Resources, Victoria. The reports in this Chapter proceed by primary quadrangle from the southeastern part of the Province, Figure A, to the northwestern part, Figure G. Within each primary quadrangle the order proceeds from A/1E to A/1W to A/2E, and sequentially to P/16E. In some instances, exceptions are made so that adjacent prospects are not widely separated.

LOCATIONS: In this report a description of the property location is given as well as the latitude and longitude and NTS designation of the 1:50,000 map-sheet in which the property lies. The latitude and longitude given is either the centre of the property or the area of major work. NTS designation is that of the main showing(s) or for the majority of the claims. In cases where claims cover more than one NTS sheet, several NTS designations are given.

NAMES: Most often the name or names given to a property are those used for the Mineral Inventory. This is often the name by which the property was originally or formerly known (for example, Glacier Gulch, Magnum). Sometimes the name or names are those of one or more of the claims that constitute the group; occasionally a name is used which is derived from the name of the company owning the property (for example, Bralorne, Granisle). Where established to a reasonable degree of confidence, the Mineral Inventory number appears after the property name (for example, Providence, 82E/SE-1). Where practicable, all names of claims comprising a property are given under the heading 'Claims.'

OWNERSHIP: Whenever possible the owner (or owners) of the claims reported is stated. For recorded claims the owner is taken directly from Departmental records at the time the manuscript is being prepared. Unrecorded bills of sale and outstanding option agreements sometimes make it impossible to determine the owner at a given date. For Crown grants, unless an extensive search is made, it is sometimes impossible to be certain of their ownership.

In instances when the operator (the company or individual for whom the work was done or who paid for it) is known but the owner is uncertain, then only the operator is recorded; when the owner is also the operator, then only the owner is recorded; and when the owner is not the operator and both are known, then both are recorded.

PUBLICATIONS: *Geology, Exploration, and Mining in British Columbia* continues to be the main vehicle for publication of data on metal, mineral, and coal exploration.

The following bulletin was published by the Department in 1973:

Bulletin No. 61, **Geology of the White Lake Basin,** by B. N. Church.

The purpose of the study was to establish the stratigraphic succession, structural history, and petrology of the Early Tertiary volcanic rocks in the White Lake area near Penticton. The results of this work provided material for a Ph.D. thesis which was submitted by the author to the University of British Columbia. Subsequently the author while on the staff of the Department of Mines and Petroleum Resources mapped an additional area in which the Dusty Mac gold-silver property is located.

The following preliminary geological maps were released in 1973:

Map No. 10, **Preliminary Geological Map of Aspen Grove Area,** by P. A. Christopher.

Map No. 11, **Preliminary Geological Map of the Buck Creek Area,** by B. N. Church.

Map No. 12, **Preliminary Geological Map of the Northern Babine Lake Area,** by N. C. Carter.

Map No. 13, **Preliminary Geological Map of the Owen Lake – Goosly Lake Area,** by B. N. Church and Petrochemical overlay maps 'a' to 'g' for the same area by J. Barakso and B. N. Church.

The following 28 aeromagnetic maps of the Federal-Provincial Government-financed programme were released in 1973:

82E – 1 to 16; 82F – 2 to 4; 82L – 1 to 3, 6 to 11.

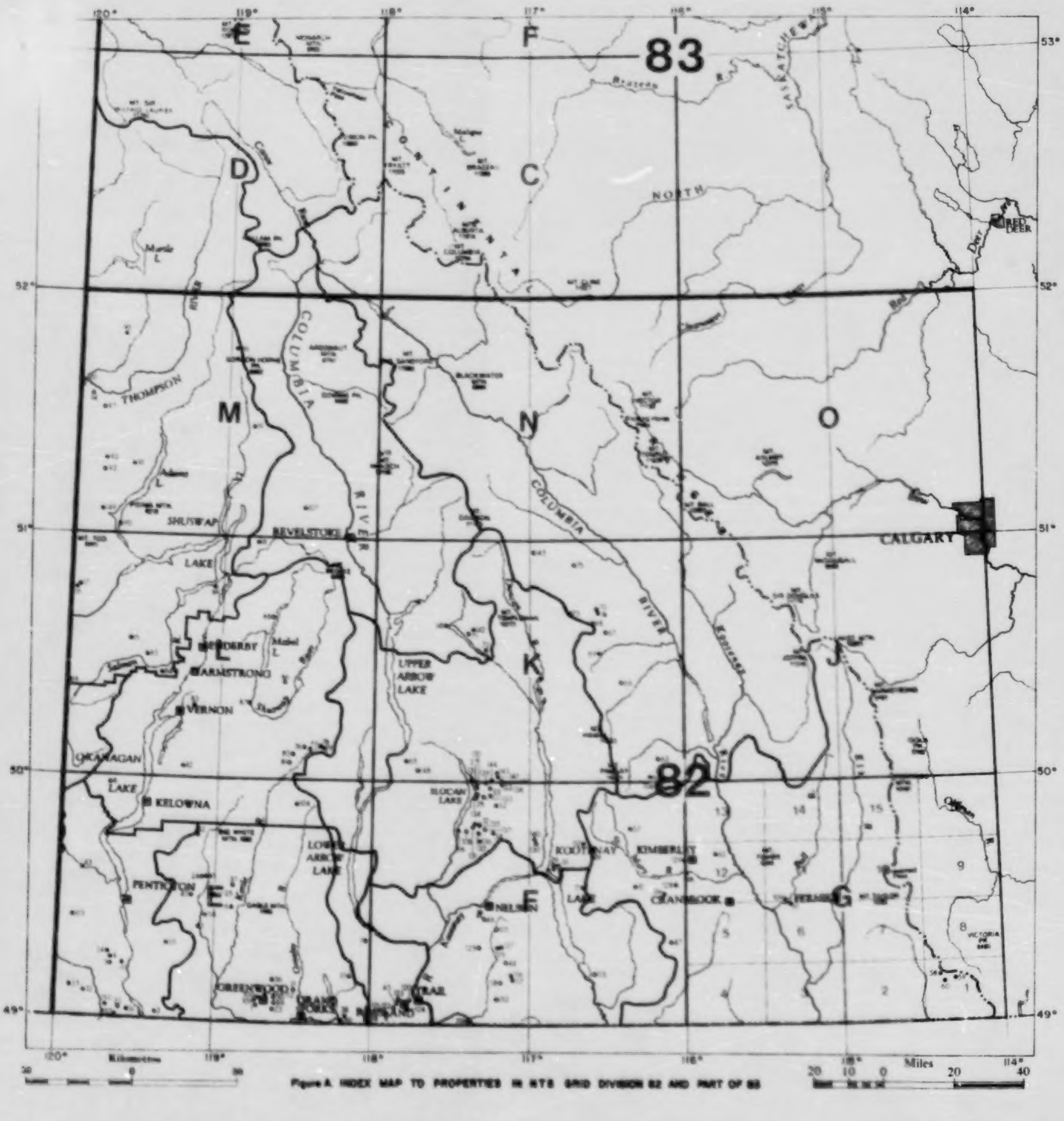
The following papers were published outside the Department by staff members:

Holland, Stuart S. and members of the Department of Mines and Petroleum Resources staff, **Review of Mining Activity for 1972,** ***Western Miner,*** April 1973.

McMillan, W. J., **Petrology and Structure of the West Flank, Frenchman's Cap Dome,** *Geol. Surv., Canada,* Paper 71-29.

McMillan, W. J., Agar, C. A., and Ulrych, T. J., **A Gravity Model for the Guichon Creek Batholith,** *Cdn. Jour. Earth Sci.,* Vol. 10, No. 6, pp. 920-935.

Sutherland Brown, A., **A Phoenix Seen in Transition,** Geolog, *G.A.C.,* Vol. 2, Pt. 4, p. 31.


120°
119°
118°
117°
116°
115°
114°
53°
52°
51°
50°
49°
83
82
E
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D
C
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L
K
J
E
F
G
THOMPSON
COLUMBIA
RIVER
NORTH
SASKATCHEWAN
Brazeau
SHUSWAP
LAKE
REVELSTOKE
CALGARY
RED DEER
ENDERBY
ARMSTRONG
VERNON
Mabel L
UPPER ARROW LAKE
OKANAGAN
LAKE
KELOWNA
SLOCAN LAKE
LOWER ARROW LAKE
PENTICTON
KOOTENAY
LAKE
KIMBERLEY
CRANBROOK
FERNIE
NELSON
GREENWOOD
GRAND FORKS
TRAIL
ROSSLAND
Kootenay
1
2
4
5
6
7
8
9
12
13
14
15
Kilometres
Miles
20
10
0
20
40

Figure A. INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 82 AND PART OF 83

KEY TO PROPERTIES ON INDEX MAP, FIGURE A.

1. TONEY, VEN, page 37.
2. SUE, page 42.
3. MARS (TORRES), page 44.
4. JACK, page 44.
5. FUR, FLO (DOORN), page 47.
6. SILVER DOLLAR, BARNATO, HACKLA, page 48.
7. DEER, PARK, page 49.
8. ROY, page 52.
9. JOB, page 60.
10. JAG, EVANS, GOODHOPE, FALLER, WHITEFISH, page 70.
11. CHICAGO, SNOW KING, page 70.
12. DALHOUSIE, page 75.
13. MOLLY HUGHES, page 90.
14. WADE, page 100.
15. BUDGET (MM), page 102.
16. PEM, HY, page 103.
17. HYAS, RHO, page 103.
18. MOLY (LH), page 104.
19. SHUSWAP, page 116.
20. LUCKY, CEDAR, RS, page 117.
21. IKE, SEATTLE, page 36.
22. JOE, OLD NO. 9 (WALT, BUL), page 45.
23. SUNNYSIDE, FANNY JOE, page 37.
24. ELK, DKD, BRU, page 51.
25. ROSEMONT, page 50.
26. LEADER (WELLINGTON), page 66.
27. LEY (LEI), page 78.
28. SHADOW, NORJACK, page 77.
29. BJ, page 72.
30. MARSHALL, page 40.
31. PASS, page 42.
32. KING EDWARD (SUSAP), page 45.
33. PA, page 45.
34. HILL, page 46.
35. AU, page 47.
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PENTICTON 82E

BASIC (Fig. A, No. 39)

LOCATION: Lat. 49° 01′ Long. 118° 02′ (82E/1E)
TRAIL CREEK M.D. Eighteen and one-half miles east of Grand Forks, extending south from Santa Rosa Creek 3 miles.

CLAIMS: BASIC 1 to 20.

OWNER: HUNTER POINT EXPLORATION LTD., 105 West Sixth Avenue, Vancouver.

DESCRIPTION: The claims are underlain by nickeliferous ultramafic rocks.

WORK DONE: Surface diamond drilling, one hole totalling 100 feet on Basic 7.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 373 (MASTODON).

MASTADON (82E/SE-91) (Fig. A, No. 110)

By P. E. Olson

LOCATION: Lat. 49° 01′ Long. 118° 10′ (82E/1E)
GREENWOOD M.D. One and one-half miles southeast of Cascade, on Mastodon Creek, at 3,000 feet elevation.

CLAIMS: MASTADON, CANYON C, SYLVESTER K, LITTLE BURNE FR., MASTADON FR. (Lots 2384s to 2388s) and LITTLE BROWN (Lot 2390s) Crown-granted claims.

OWNER: HUNTER POINT EXPLORATION LTD. (wholly owned subsidiary of Chromex Nickel Mines Ltd.), 105 West Sixth Avenue, Vancouver.

METALS: Nickel, copper.

DESCRIPTION: Early exploration on outcrops of dunite stocks for chromium subsequently disclosed nickel values in the order of 0.25 per cent in the main dunite mass.

WORK DONE: Three diamond-drill holes, totalling about 1,000 feet, were drilled late in 1973. Some copper values are reported to have been found in this drilling.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 311; 1971, p. 373 (MASTODON); 1972, p. 34.

ANN, CALEDONIA (82E/SE-88) (Fig. A, No. 38)

LOCATION: Lat. 49° 02′ Long. 118° 09′ (82E/1E)
GREENWOOD M.D. Twelve and one-quarter miles east of Grand Forks, on and surrounding Castle Mountain and extending south to the International Boundary, between 3,000 and 4,000 feet elevation.

CLAIMS: ANN 1 to 158, HANEY, MOSES, CHARLES, SURPRISE 1 to 4, TUFF 1 to 4, HAZ-AL 1 to 4, 9 to 16, H 1 to 16, HUP 1 to 8 plus Mineral Lease M-265 comprising CALEDONIA (Lot 1756).

(82E/1E)

OWNER: HUNTER POINT EXPLORATION LTD. (wholly owned subsidiary of Chromex Nickel Mines Ltd.), 105 West Sixth Avenue, Vancouver.

METALS: Nickel, chromium, iron.

DESCRIPTION: The property is centred on nickeliferous ultramafic rocks carrying finely disseminated nickel sulphides, chromite, and magnetite in dunite.

WORK DONE: Surface diamond drilling, one hole totalling 200 feet on H 12 and one hole totalling 560 feet on Ann 31.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 373 (MASTODON); 1972, pp. 33, 34.

BURNT BASIN (82E/SE-81, 82, 99, 100, 102, 103) (Fig. A, No. 111)

By P. E. Olson

LOCATION: Lat. 49° 10' Long. 118° 07' (82E/1E)
GREENWOOD M.D. Nine and one-half miles north-northeast of Christina Lake village, at the headwaters of Josh and Mollie Creeks, at approximately 4,500 feet elevation.

CLAIMS: Mineral Leases M-52, M-118, M-119, M-131, M-183, M-196, M-197, M-205, and M-365 which comprise 15 Crown-granted claims including BURNT BASIN (Lot 1136), AJAX (Lot 1509), EVA BELL (Lot 2031), and HALIFAX (Lot 3042); also the located claims SHIRLEY 1 to 8, CHRISTINA 1 to 6, BP 1 to 3 Fractions, HAVANA Fraction, and GALENA Fraction.

OWNER: DONNA MINES LTD., 642 Clark Drive, Vancouver.

METALS: Silver, lead, zinc (production shown on Table I).

DESCRIPTION: In the vicinity of Burnt Basin, the Rossland Group of volcanic rocks predominate. The succession contains considerable limestone and argillaceous sedimentary rocks locally altered to skarn. Mineralization is irregular.

WORK DONE: Stripping of overburden, cutting of pits in bedrock, and some mining from the surface showings were done during the year. About 164 tons of ore was shipped to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 33.

IKE, SEATTLE (82E/SE-156, 158) (Fig. A, No. 21)

LOCATION: Lat. 49° 08' Long. 118° 28.5' (82E/1W)
GREENWOOD M.D. Eight miles north of Grand Forks, on the west side of Granby River.

CLAIMS: IKE 1 to 25, 30 to 36 plus Mineral Leases M-330 comprising SEATTLE (Lot 652) and VIRGINIA CITY (Lot 1606), M-331 comprising LOYAL CANADIAN (Lot 1608), M-332 comprising NO. 1 (Lot 1362) and M-360 comprising BUNKER HILL (Lot 1609).

OWNER: RYSLO SILVER MINES LTD., 418, 837 West Hastings Street, Vancouver.

METAL: Copper.
DESCRIPTION: Chalcopyrite occurs in skarn.
WORK DONE: 1972 – IP survey, 2.5 line-miles.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 34; Assessment Report 4424.

SUNNYSIDE, FANNY JOE (82E/SE-159, 160) (Fig. A, No. 23)

LOCATION: Lat. 49° 03.5' Long. 118° 37.5' (82E/2E)
GREENWOOD M.D. Approximately 3.5 miles southeast of Greenwood, on the northwest slope of Mount Attwood.
CLAIMS: Mineral Lease M-401 comprising SUNNYSIDE (Lot 2879) and FANNY JOE (Lot 7295).
OWNER: T. B. WRIXON, 410, 1119 Hornby Street, Vancouver.
WORK DONE: Linecutting.
REFERENCE: Assessment Report 4462.

TONEY, VEN (82E/SE-121) (Fig. A, No. 1)

LOCATION: Lat. 49° 05' Long. 118° 42' (82E/2E)
GREENWOOD M.D. One and one-half miles west-southwest of Greenwood, extending south from Buckhorn Creek to Haas Creek.
CLAIMS: TONEY (Lot 1907), VEN, VEND, VENDELA, ANTON, SERF, VICKI, ARN, GOTCHA, PKK, totalling approximately 80.
OPERATOR: MAPLETREE EXPLORATION CORPORATION, 1101, 510 West Hastings Street, Vancouver.
METAL: Copper.
DESCRIPTION: Chalcopyrite and pyrite occur as disseminations and fracture fillings in diorite of the Cretaceous Nelson intrusions, with chalcopyrite also noted along Haas Creek as fracture fillings in brecciated paragneiss. Massive pyrrhotite is found in the eastern portion of the property where a diorite pluton intruded metamorphosed sedimentary rocks.
WORK DONE: Topographic mapping covering all claims.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 35; Assessment Report 4237.

TAM O'SHANTER, IVA LENORE (82E/SE-130, 164) (Fig. A, No. 101)

LOCATION: Lat. 49° 05' Long. 118° 43' (82E/2E)
GREENWOOD M.D. Two miles west of Greenwood, on Buckhorn Creek near its head, at approximately 4,000 feet elevation.
CLAIMS: GOTCHA, totalling approximately 20, two mineral leases: M-388 comprising TAM O'SHANTER (Lot 2405) and M-389 comprising SALAMANCA Fraction (Lot 2902), IVA LENORE (Lot 1262), VICEROY Fraction (Lot 1722), ARLINGTON Fraction (Lot 1110), and NO. 9 (Lot 882s).

(82E/2E)

OWNERS: John MacLean and A. Bombini.

OPERATOR: MASCOT MINES & PETROLEUMS LIMITED, Box 10010, Pacific Centre, 700 West Georgia Street, Vancouver.

METALS: Copper, molybdenum, (gold).

DESCRIPTION: Diorite is present along with Knob Hill quartzite and greenstone. The greenstone units carry disseminated chalcopyrite, pyrrhotite, and pyrite and quartz stringers containing minor molybdenite and some chalcopyrite.

WORK DONE: Percussion drilling, four holes totalling 600 feet on Iva Lenore.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 35 (TONEY, VEN).

MOTHERLODE, GREYHOUND (82E/SE-34, 35, 37, 38, 48, 50) (Fig. A, No. 100)

By P. E. Olson

LOCATION: Lat. 49° 06' Long. 118° 43' (82E/2E)
GREENWOOD M.D. One and one-half miles northwest of Greenwood, on Motherlode, Deadwood, Greyhound, and Boundary Creeks, between elevations of 3,000 and 3,600 feet.

CLAIMS: FOX 1 to 6, MT 1 to 17, BIRTHDAY Fraction, HARDSCRABBLE Fraction, etc., totalling 31; four mineral leases: M-122 comprising PEACOCK (Lot 1243), M-294 comprising ST. EUGENE Fraction (Lot 2321), GOLD BUG (Lot 895), M-306 comprising PLUTONIA (Lot 884), M-315 comprising SF Fraction (Lot 832), HILL Fraction (Lot 2945); and 15 Crown-granted claims including MOTHERLODE (Lot 704), SUNSET (Lot 788), CROWN SILVER (Lot 789), GREYHOUND (Lot 1014), STANDARD (Lot 1463), etc.

OWNERS: Zeus Oil & Holdings Ltd. and Mascot Mines & Petroleums Limited.

OPERATOR: MASCOT MINES & PETROLEUMS LIMITED, Box 10010, Pacific Centre, 700 West Georgia Street, Vancouver.

METALS: Copper, silver, gold.

DESCRIPTION:

The property is underlain by the Brooklyn limestone of the Attwood Group, granite and granodiorite of Jurassic age, and pulaskite porphyry of Miocene age. Chalcopyrite, pyrite, pyrrhotite, and magnetite or hematite occur along fractures and interstitially between grains in a skarn zone formed at the contact of the limestone and granitic rocks.

Skarn at the Greyhound pit is unique in the district and is characterized by an absence of magnetite and contains an abundance of pyrite. Rocks throughout the Greyhound pit are intensely brecciated and altered with considerable development of epidote, chlorite, hematite, and actinolite. Mineralization occurs in parallel and coalescing lenses trending east-west and dipping southerly with some isolated zones probably resulting from faulting.

WORK DONE:

During 1973 the company completed a general exploration programme over a large part of the property with emphasis on known zones of mineralization. Approximately 10 miles of geophysical lines were recleared and magnetometer surveys completed. Stadia and geological mapping was also done near mineralized areas following which 25 diamond- drill holes (6,949 feet), 7 rotary holes (734 feet), and 15 percussion holes (3,066 feet) were completed. A programme of rotary and percussion drilling with reverse circulation was carried out to test the quality of the collapsed zone in the centre of the Mother Lode pit.

The mill, surface plant, and equipment at the property were examined and a few minor alterations made.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, pp. 228-230; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 380.

PHOENIX MINE (82E/SE-13 to 15, 18 to 30, 161, 163) (Fig. A, No. 99)

By P. E. Olson

LOCATION: Lat. 49° 06′ Long. 118° 36′ (82E/2E)
GREENWOOD M.D. Approximately 3.5 miles east of Greenwood, on Knob Hill and Montezuma Ridge. ATT and MUZ claims are on the north slope of Attwood Mountain.

CLAIMS: Approximately 225 Crown-granted and located claims and claims held by mineral leases including OLD IRONSIDES (Lot 589), GREY EAGLE (Lot 793), AETNA (Lot 978), VICTORIA (Lot 933), GOLD DROP FR. (Lot 1252), FOURTH OF JULY (Lot 922) plus ATT, MUZ, WENDY, COY.

OWNER: THE GRANBY MINING COMPANY LIMITED, Phoenix Copper Division, Box 490, Grand Forks.

METALS: Copper, gold, silver (production shown on Table I).

DESCRIPTION:

Ore horizons at Phoenix lie within a lens of fossiliferous argillite, limestone, chert, quartzite, and greenstone enclosed within an irregular mass of poorly sorted chert conglomerate. The conglomerate is apparently volcanic in origin, presumed to be Triassic in age and lies unconformably on a series of Early Paleozoic andesites and cherts.

In the northern portion of the Old Ironsides open pit the recrystallized limestone has been replaced in part by chert and chlorite. Metamorphic grade increases to the south, with epidote and magnetite becoming more common, and at the south end of the pit the rock has been completely replaced by garnet.

Copper occurs as disseminated grains of chalcopyrite in the limy rocks and, to a lesser extent, in massive magnetite which commonly occurs as lenses injected between the limy sedimentary rocks and the footwall argillite. Small amounts of gold and silver occur in solid solution and as minute blebs in pyrite and chalcopyrite grains.

WORK DONE:

The bulk of the ore milled came from the marginal ore stockpile which had an average grade of 0.42 per cent copper.

Ore reserves in place amount to 1,379,600 tons grading 0.80 per cent copper and marginal ore stockpiles amount to 3,712,000 tons grading 0.40 per cent copper as of January 1, 1974. The concentrator capacity was increased from 2,600 tons per day to 2,750 tons per day by the addition of a new rod mill.

A geochemical soil survey, consisting of 304 samples taken at a 400 by 500-foot grid spacing, was done on the Att 1 to 17, Muz 1 to 4, and six Crown-granted claims including Winner (Lot 1158) and Rattler (Lot 1265).

Reclamation of finished areas continued, with waste dumps being hydroseeded and several varieties of shrubs being planted on dumps and abandoned tailings ponds.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 36; Assessment Report 4750.

MARSHALL (82E/SE-31) (Fig. A, No. 30)

LOCATION: Lat. 49° 07' Long. 118° 36' (82E/2E)
GREENWOOD M.D. Three and one-quarter miles east-northeast of Greenwood, extending north from Providence Lake as far as the Canadian Pacific Railway.

CLAIMS: Mineral Lease M-138 comprising MARSHALL, LITTLE ANNIE, LITTLE BROWN (Lots 2388 to 2390), BRANDON (Lot 2382), BRANDON Fraction (Lot 2403), CUSTER Fraction (Lot 160); Mineral Lease M-229 comprising MARSHALL Fraction (Lot 2404); Mineral Lease M-269 comprising LITTLE BURNE Fraction (Lot 2387); TIO BURACHO 1 to 6 Fractions; TIA 1 to 12.

OWNER: San Jacinto Explorations Limited.

OPERATOR: HIGHLAND LODE MINES LTD., 728, 510 West Hastings Street, Vancouver.

METALS: Gold, silver, copper, (lead, zinc).

DESCRIPTION: The rocks in the area consist of late Paleozoic limestone and chert, dipping gently southward to the north and west of Providence Lake. On the Marshall Crown-granted claim, pyrrhotite, pyrite, chalcopyrite, sphalerite, and minor magnetite, galena, and specular hematite occur in a garnet-chlorite skarn at the contact of limestone and rubbly chert, near the crest of an isoclinal fold. Highly altered quartz diorite occurs approximately 300 feet to the northwest of the mineralization.

WORK DONE: Percussion drilling, nine holes totalling 1,000 feet on the Marshall claim; existing 200-foot-spaced grid lines were resurveyed and rechained at 100-foot intervals; magnetometer survey, reading every 25 feet covering mineral leases; atomic probe, on polished sections of some grab samples; preliminary metallurgical report on assay rejects.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, p. 228; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 376; 1972, p. 33 (CALEDONIA, ANN).

(82E/2E)

PROVIDENCE (82E/SE-1) (Fig. A, No. 112)

By P. E. Olson

LOCATION: Lat. 49° 07' Long. 118° 40' (82E/2E)
GREENWOOD M.D. Approximately 1.5 miles north of the centre of Greenwood, on Providence Creek, at approximately 2,700 feet elevation.

CLAIM: PROVIDENCE (Lot 618).

OWNER: W. E. MacARTHUR, Greenwood.

METALS: Silver, gold, lead, zinc (production shown on Table I).

DESCRIPTION: A high-grade gold-silver vein with some lead and zinc, lies in sheared argillite and volcanic rocks along the northern contact of a granodiorite stock.

WORK DONE: The operator sent a trial shipment of ore to the Trail smelter late in the year.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1961, p. A47; ***B.C. Dept. of Mines & Pet. Res.,*** Bull. 20, Pt. III, p. 13.

JEWEL-ENTERPRISE, ETHIOPIA (82E/SE-55, 151) (Fig. A, No. 36)

By P. E. Olson

LOCATION: Lat. 49° 10' Long. 118° 37' (82E/2E)
GREENWOOD M.D. Five and one-quarter miles northeast of Greenwood, extending southeast from the southern end of Jewel Lake, at approximately 3,800 feet elevation.

CLAIMS: JEWEL (Lot 850), DENERO GRANDE (Lot 851), ANCHOR (Lot 1021), ENTERPRISE (Lot 1022), ETHIOPIA (Lot 932), PERSERVERENCE (Lot 3088), GEM Fraction (Lot 1416), MASSACHUSETTS (Lot 1401) plus DENORO CHICO and DENORO CHICO Fraction located claims.

OWNER: W. E. McArthur.

OPERATOR: COLT RESOURCES LTD., 711, 475 Howe Street, Vancouver.

METALS: Gold, silver, lead.

DESCRIPTION: In the claim area, an epithermal quartz vein carrying gold and silver tellurides and galena cuts a granodiorite intrusion in contact with altered volcanic rocks and quartzites.

WORK DONE: Airphoto mapping, 1 inch equals 1,000 feet covering Denero Grande, Jewel, Enterprise, and Ethopia; reconnaissance underground geological mapping covering Jewel, Enterprise, and Ethiopia; surface diamond drilling, 11 holes totalling 3,000 feet and underground diamond drilling, 1 hole totalling 255 feet on Denero Grande; trenching, 300 feet on Denero Grande; 290 feet of underground work (12 by 6-foot shaft on Denero Grande with a view to developing the ore suggested by diamond drilling); surface workings mapped, 1 inch equals 50 feet on Jewel and Denero Grande.

REFERENCE: *Minister of Mines, B.C.,* Ann. Rept., 1933, p. 158 (DENTONIA).

SUE (Fig. A, No. 2)

LOCATION: Lat. 49° 02′ Long. 119° 23′ (82E/3W)
OSOYOOS M.D. Four miles east of Osoyoos, astride Highway 3, on the southwest side of Anarchist Mountain between elevations of 2,800 and 3,700 feet.

CLAIMS: SUE 13, 15, 17, 19, 27 to 42.

OWNER: WHITE RIVER MINES LTD., 675, 555 Burrard Street, Vancouver.

DESCRIPTION: The claims cover part of a northwest-trending contact zone between the metasedimentary Anarchist Group, consisting of greywacke, quartzite, and andesite, and the gneissic quartz diorites of the Nelson pluton. In the contact zone, the quartz diorite is increasingly foliated, then gneissic and fine grained toward the metasedimentary rocks where it is also cut by dacite dykes.

WORK DONE: Ground magnetometer survey, approximately 17.6 line-miles covering all claims; surface geological mapping, 1 inch equals 200 feet and geochemical soil survey, 465 samples taken at 100 by 400-foot grid spacing, 9 line-miles, covering Sue 13, 15, 17, and 29-40.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 38; Assessment Reports 4381, 4548.

NIKKI (Fig. A, No. 102)

LOCATION: Lat. 49° 00′ Long. 119° 38′ (82E/4E)
OSOYOOS M.D. Seven and one-half miles west-southwest of Osoyoos, extending north three-quarters of a mile from the International Boundary, between 2,000 and 2,800 feet elevation.

CLAIMS: NIKKI 1 to 12.

OWNER: BONAVISTA MINING CORPORATION LTD., 315, 543 Granville Street, Vancouver.

WORK DONE: Magnetometer, electromagnetic, and radiometric survey, 34 line-miles covering all claims.

REFERENCES: Assessment Reports 2219 (CAM, EB), 4759.

PASS (82E/SW-111) (Fig. A, No. 31)

LOCATION: Lat. 49° 03′ Long. 119° 33′ (82E/4E)
OSOYOOS M.D. Four miles west of Osoyoos, extending east from Blue and Kilpoola Lakes and north from the International Boundary to the Richter Pass Highway, at approximately 3,000 feet elevation.

CLAIMS: PASS 1 to 91, SKI 1 to 16.

OWNER: CONE PROPERTIES LTD., 14th Floor, 1030 West Georgia Street, Vancouver V6E 2Y3.

METALS: Copper, lead, gold, silver.

DESCRIPTION: The property is underlain by metasedimentary and metavolcanic rocks of the Kobau Group intruded by rocks of the Nelson batholith.

(82E/4E)

Scattered occurrences of copper, lead, gold, and silver mineralization occur in narrow lenses and veins of quartz within Kobau Group rocks.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 58 line-miles; and geochemical soil survey, 3,100 samples, 58 line-miles covering all claims; percussion drilling, 10 holes totalling 2,695 feet on Pass 19, 23, 24, 53, 57, 89, and 91.

HORN SILVER (82E/SW-2) (Fig. A, No. 150) By David Smith

LOCATION: Lat. 49° 03′ Long. 119° 41′ (82E/4E)

OSOYOOS M.D. Ten miles west-northwest of Osoyoos, covering Richter Mountain from the Similkameen River road to Richter Creek.

CLAIMS: Approximately 145 claims and fractions including UTICA, AMY, PINE, BEN, plus HORN SILVER (Lot 1928), SILVER BELL, and BRITISH Crown-granted claims.

OWNER: DANKOE MINES LTD., 2002, 1177 West Hastings Street, Vancouver; mine address, Box 190, Keremeos; W. K. Beach, general manager.

METALS: Silver, gold, copper.

DESCRIPTION: The ore occurs in a series of narrow, gently dipping quartz veins cutting a syenitic-dioritic host rock. Ore minerals, including argentite, tetrahedrite, pyrargyrite, cerargyrite, galena, sphalerite, pyrite, and chalcopyrite, occur as irregular concentrations and bands within the vein system.

WORK DONE:

To date the mine has been developed by drifts and crosscuts on three principal levels. Room and pillar slusher stopes have been developed either directly from the drifts or by short access raises to the veins. Mining has been done exclusively by slusher stopes with drilling by Jackleg drills.

Development work in 1973 was restricted to initiation of rehabilitation of the mine. This work was aimed at resuming production in early 1974. Exploration work consisted of the commencement of diamond drilling on the lowest level of the mine. Approximately 350 feet was drilled in December.

The tailings impoundment dyke was raised to accommodate production for the years 1974 to 1976.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 394.

SUSIE (82E/SW-90) (Fig. A, No. 113) By David Smith

LOCATION: Lat. 49° 13′ Long. 119° 36′ (82E/4E)

OSOYOOS M.D. Three miles northwest of Oliver, extending southwest from Victoria Creek to Sawmill Creek, at approximately 1,900 feet elevation.

CLAIMS: SUSIE (Lot 1917) plus six other Crown-granted claims comprising GREY GABLES, AGRICOLA, TRES HERMANOS, OAKVILLE, FEDERAL, BANKER (Lots 2026 to 2031).

OWNER: Fairview Mining Company Ltd.

(82E/4E)

OPERATOR: HEM MINES LTD., Box 855, Oliver; Harold Hemmerick, manager.
METALS: Silica, silver, gold, copper, lead, zinc (production shown on Table I).
DESCRIPTION: Cretaceous granite of the Nelson plutonic rocks encloses quartz veins carrying pyrite, galena, chalcopyrite, and sphalerite.
WORK DONE: Open stoping, slusher, loading into 1-ton car using Emico loader; hoisted to surface on slope; trucked to Oliver for shipment by rail to the Trail smelter.
REFERENCE: *Minister of Mines, B.C.*, Ann. Rept., 1964, p. 109.

MARS (TORRES) (82E/SW-108) (Fig. A, No. 3)

LOCATION: Lat. 49° 13' Long. 119° 40' (82E/4E)
OSOYOOS M.D. Five and three-quarter miles northwest of Oliver, near the summit of the old Fairview-Cawston road, astride and extending east from Blind Creek.
CLAIMS: MARS 1 to 4, YORK 1 and 2, BAR 1 to 8, DOE 1 to 18.
OWNER: TOPPER MINING LTD., 1203, 1177 West Hastings Street, Vancouver.
METALS: Gold, silver, copper, lead, zinc (production shown on Table I).
DESCRIPTION: The southern claims lie on the north side of a large roof pendant of Carboniferous Kobau chloritic schist with intercalated limestone, greenstone, and serpentine. The rest of the property is underlain by Nelson diorite and Valhalla granite and granodiorite. On the Mars 1 claim, quartz veins occupy shear zones in altered diorite and contain lenses and disseminations of pyrite, chalcopyrite, galena, sphalerite, arsenopyrite, tetrahedrite, silver, and gold.
WORK DONE: Pace and compass geological survey, 1 inch equals 200 feet covering Mars 1-4, York 1 and 2, Bar 1-8; geological mapping, 1 inch equals 1,200 feet covering Doe 1-14 and 16-18.
REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1933, p. 167; 1934, p. D15; Assessment Reports 4383, 4637.

JACK (Fig. A, No. 4)

LOCATION: Lat. 49° 14' Long. 119° 40' (82E/4E)
OSOYOOS M.D. Six miles northwest of Oliver, lying across the headwaters of Blind Creek, between 3,400 and 5,200 feet elevation.
CLAIMS: JACK 1 to 26.
OWNER: JETEX RESOURCES LTD., 430, 1155 West Georgia Street, Vancouver.
DESCRIPTION: The property is underlain by quartz diorite, with some amphibolite zones, of the Nelson plutons and granite of the Valhalla plutons. The only sulphide noted was pyrite, both accompanied by limonite staining, contained in a quartz vein, and disseminated in granite within 60 feet of the lithologic contact.
WORK DONE: Geochemical soil and rock chip survey, 275 samples, 13 line-miles and geological survey covering all claims.
REFERENCE: Assessment Report 4382.

JOE, OLD NO. 9 (WALT, BUL) (82E/SW-28, 37, 54) (Fig. A, No. 22)

LOCATION: Lat. 49° 02.5' Long. 119° 35.5' (82E/4E)
OSOYOOS M.D. Five and one-half miles due west of Osoyoos, extending west and south from Richter Lake between 1,800 and 3,900 feet elevation.

CLAIMS: WALT 1 to 16, 18, 22, 24, 26, 28, 30 to 40, BUL 1 to 26, BUD 1 to 3 Fractions, BILL 1 to 3 Fractions.

OWNER: MULTIPLE MINING DEVELOPMENT LTD., 5017 Ross Street, Red Deer, Alta.

METAL: Copper.

DESCRIPTION: The southern two-thirds of the property is underlain by Kruger syenite and the northeast part by granodiorite and quartz diorite separated by a northwest-trending band of Kobau quartzite and quartz-mica schist. The quartzite and adjacent quartz diorite contain some disseminated pyrite, chalcopyrite, and bornite adjacent to the quartz and calcite veins.

WORK DONE: 1972 – VLF EM survey, 15.1 line-miles covering Walt 11-14, 31, 32, Bul 7-17, 19-24; 1973 – surface geological mapping, 1 inch equals 400 feet covering Bul 1-26, Walt 1-16, 31, 32, 38-40.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 39; Assessment Reports 4423, 4919.

PA (82E/SW-105) (Fig. A, No. 33)

LOCATION: Lat. 49° 09' Long. 119° 56' (82E/4W)
OSOYOOS M.D. Six and one-half miles southwest of Keremeos, near the head of Gillanders Creek, immediately west of Indian Reserve 13, at approximately 6,500 feet elevation.

CLAIMS: PA 1 to 18.

OWNER: UNION CARBIDE EXPLORATION CORPORATION, 601, 1112 West Pender Street, Vancouver V6E 2S1.

METAL: Tungsten.

DESCRIPTION: In the claim area, tightly folded volcanic cherts, tuffs, and greenstones with minor intercalations, including lenses of limestone, carry scheelite mineralization in skarn lenses.

WORK DONE: Surface diamond drilling, 13 holes totalling 827 feet on Pa 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 40.

KING EDWARD (SUSAP) (82E/SW-3) (Fig. A, No. 32)

LOCATION: Lat. 49° 06' Long. 119° 49' (82E/4W)
OSOYOOS M.D. Seven miles south of Keremeos, extending south from Susap Creek and north to Hunter Creek, between 3,000 and 3,500 feet elevation.

CLAIMS: RON 1 to 21, DON 1 to 3, BUCK 11 to 26, SUP 3 to 6, SUSAP 2 Fraction and part of Indian Reserve 13.

(82E/5W)

OWNER: Cro-Mur Mining and Exploration Co. Ltd.

OPERATOR: CANADIAN OCCIDENTAL PETROLEUM LTD., 801, 161 Eglinton Avenue East, Toronto, Ont.

METALS: Copper, molybdenum, silver, gold.

DESCRIPTION: The claims are underlain by a contact zone between a quartz monzonite porphyry batholith and volcanic and metasedimentary rocks. The Old Tom Formation has four mappable hybrid igneous units in this zone and carries hydrothermal mineralization consisting of pyrite, chalcopyrite, and molybdenite with minor values of silver and gold.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; underground geological mapping, 1 inch equals 20 feet (two adits, 200 feet); ground magnetometer survey, 80 line-miles covering all claims; geochemical survey, 80 line-miles, 3,200 soil samples and 498 rock chip samples covering all claims; surface diamond drilling, 1,000 feet on Sup 6; 4 miles of road reconstructed on Ron claims.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1962, p. 64; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 39.

JJ (82E/SW-114) (Fig. A, No. 103)

LOCATION: Lat. 49° 25′ Long. 119° 54′ (82E/5W)
OSOYOOS M.D. Fourteen miles southwest of Penticton, on Shatford Creek, extending southwest to Keremeos Creek, between 4,300 and 5,300 feet elevation.

CLAIMS: JJ 1 to 32.

OWNER: J. J. Oberbillig.

OPERATOR: NEW NORTHCAL MINES LTD., 420, 475 Howe Street, Vancouver.

METAL: Copper.

DESCRIPTION: Batholithic granodiorite encloses a small roof pendant or large inclusion of quartz-biotite schist and gneiss. These rocks are truncated to the southeast by a fault zone underlying Shatford Creek. Near the fault the schist contains disseminated pyrite, pyrrhotite, and minor chalcopyrite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical soil survey, 193 samples taken at 200 by 400-foot and 800-foot grid spacing covering JJ 3-10 and 14-22.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 41; Assessment Report 4794.

HILL (82E/SW-113) (Fig. A, No. 34)

LOCATION: Lat. 49° 16′ Long. 119° 41′ (82E/5E)
OSOYOOS M.D. Seven and one-half miles northeast of Keremeos, astride the access road on the north side of Orofino Mountain, at approximately 4,700 feet elevation.

CLAIMS: HILL 2 to 5.

OWNER: D. W. Vieweger.

(82E/6W)

OPERATOR: CRIPPLE CREEK RESOURCES LTD., c/o T. R. Tough and Associates, 602 West Hastings Street, Vancouver.

METAL: Gold.

DESCRIPTION: The claim group is underlain by a medium-grained hypidiomorphic granular, grey granodiorite of the Osoyoos granitic intrusion. Mineralized irregular quartz veins are present within northwest-trending narrow shear zones which generally parallel a variable schistosity in the granodiorite.

WORK DONE: Geochemical soil survey, 105 samples taken at 50-foot centres covering Hill 3 and 5.

REFERENCE: Assessment Report 4604.

AU (82E/SW-112) (Fig. A, No. 35)

LOCATION: Lat. 49° 18' Long. 119° 17' (82E/6W)
OSOYOOS M.D. Twelve and three-quarter miles east-southeast of Okanagan Falls, on the east side of Fish Creek, 4 miles north of Vaseaux Creek, at approximately 4,600 feet elevation.

CLAIMS: AU 1 to 6, RAIN 1 and 2.

OWNERS: K. G. Ewers, R. W. McLean, and K. G. Thompson.

OPERATOR: TECK MINING GROUP LIMITED, 700, 1177 West Hastings Street, Vancouver V6E 2K5.

METAL: Gold, silver.

DESCRIPTION: Tertiary volcanic rocks are traversed by a northeasterly trending shear zone with associated silicified patches and bands and calcite veins. Rare fine-grained pyrite is exposed in Northwood Pulp Company's roadcut on the Au 2 claim.

WORK DONE: Magnetometer survey, 4,500 feet; VLF EM survey, 4,500 feet; and geochemical soil survey, one-half line-miles, 63 samples at 50 by 200-foot grid spacing covering Au 2.

REFERENCE: Assessment Report 4763.

FUR, FLO (DOORN) (82E/SW-101, 102) (Fig. A, No. 5)

By P. E. Olson

LOCATION: Lat. 49° 22' Long. 119° 06' (82E/6E)
GREENWOOD M.D. Four and one-quarter miles south of Beaverdell, astride the West Kettle River and Eugene Creek, at approximately 4,000 feet elevation.

CLAIMS: FUR, FLO, FILL, DOORN, RON, DIP, GOFUR, PLAN, LOR, AG, etc., totalling 119.

OWNER: Argentia Mines Ltd.

OPERATORS: RIO TINTO CANADIAN EXPLORATION LIMITED, Box 49108, Vancouver V7X 1G4 and ARGENTIA MINES LTD., 1460 Pandosy Street, Kelowna.

METALS: Copper, lead, zinc (production shown on Table I).

DESCRIPTION: The claims are underlain by zoned (?) Nelson plutons cut by hornblende feldspar dykes. Sphalerite, galena, and chalcopyrite occur as fracture fillings and disseminations in an altered granodiorite.

(82E/6E)

WORK DONE: Rio Tinto Canadian Exploration Limited – IP survey, 10.1 line-miles and magnetometer survey, 14.4 line-miles covering Fur 1-15, Flo 1-3, Dip 1, 3-8, Betty 1; geological and preliminary topographical mapping, 1 inch equals 400 feet and trench sampling covering Fur 1-12, Gofur 1-3, Dip 1-6, Plan 2-7; surface diamond drilling, nine holes totalling 3,287 feet on Fur 1, 2, 3, and 4; Argentia Mines Ltd. – mined two truck loads (60 tons) of ore and shipped it to the Trail smelter.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 42; Assessment Reports 4384, 4385, 4851.

HIGHLAND BELL MINE (82E/SW-30) (Fig. A, No. 114)

By P. E. Olson

LOCATION: Lat. 49° 26′ Long. 119° 04′ (82E/6E)
GREENWOOD M.D. One and one-third miles due east of Beaverdell, at the head of Wallace Creek, at approximately 4,100 feet elevation.

CLAIMS: Fourteen located and 31 Crown-granted claims including HIGHLAND LASS (Lot 2341) and BELL (Lot 2343).

OWNER: TECK CORPORATION LTD., 700, 1177 West Hastings Street, Vancouver; mine office, Beaverdell.

METALS: Silver, lead, zinc (production shown on Table I).

DESCRIPTION: The mine is situated along 7,000 feet of mineralized structure within which a number of quartz-calcite vein systems occur. Intense block faulting which followed ore deposition has greatly complicated exploration and mining within the lode system.

WORK DONE:

Salvage of pillars and the extending of the abandoned stopes accounted for most of the production during the year. Jacklegs and stopers are used to slash out ore and slushers are used to move the ore to chutes. Country rock and vein material are both fairly weak and are also cut by numerous fractures and faults, making mining difficult. Thus far, there appears to be no general failure of hangingwall rocks, but local failure is quite common. Irregularity of the mineralized zones necessitates much exploration and diamond drilling, but does permit waste zones to be left as pillars to support the hangingwall.

The mill treated all produced ore and recovered 459,883 ounces of silver during the year.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1949, pp. 138-148; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 42, 43.

SILVER DOLLAR, BARNATO, HACKLA (82E/SE-69, 109) (Fig. A, No. 6)

LOCATION: Lat. 49° 29′ Long. 118° 54′ (82E/7W)
GREENWOOD M.D. About 27 miles north-northwest of Greenwood, between the Kettle River and Triple Lakes, from Stewartson Creek north.

CLAIMS: Mineral Lease M-400 comprising GOLDEN NUGGET (Lot 3142), THUNDER HILL (Lot 3143), SILVER DOLLAR (Lot 2842), GOLD DOLLAR FR., (Lot 2844), MONETOR, HUNTER, UTOPIA (Lots 2858 to 2860), YORKSHIRE LASS (Lot 3024), MAME (Lot 2864), KAFFIR KING (Lot 2646), SILVER BELL (Lot 2644).

(82E/8E)

OWNER: G. V. LLOYD, 607 Willowbrook Drive SE., Calgary, Alta.

METALS: Gold, silver.

DESCRIPTION: According to old reports, pyrite, pyrrhotite, and arsenopyrite are present as disseminations and in stocks, lenses, and fissures, in metamorphosed tuffs and lavas of the Wallace Group, which has been intruded by quartz diorite.

WORK DONE: Linecutting, 25 miles.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1900, p. 879 (HACKLA, SILVER DOLLAR); 1928, p. 255 (HACKLA, BARNATO FR.); 1938, pp. D-17-D22; *B.C. Dept. of Mines*, Bull. 1, 1932, p. 86; Assessment Report 4238.

DEER, PARK (82E/SE-162) (Fig. A, No. 7)

LOCATION: Lat. 49° 20' Long. 118° 02' (82E/8E)
TRAIL CREEK M.D. Twenty-eight miles northeast of Grand Forks, 4,500 feet southwest of Mount Shields at approximately 5,000 feet elevation.

CLAIMS: DEER 11 to 20, 27 to 29, 31, 33 to 40, DEER Fraction, PARK Fraction, PARK 5 Fraction, PARK 6 to 12, 14 to 24, CAMEL 1 to 42.

OWNERS: H. Veerman and William Botel (bill of sale to Amax Exploration, Inc., December 7, 1973).

OPERATORS: 1972 – WEST COAST MINING & EXPLORATION LTD., 205, 122 East 14th Street, North Vancouver; 1973 – AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver V6E 3L6.

METAL: Molybdenum.

DESCRIPTION: The Coryell monzonite to quartz monzonite pluton has been intruded by aphanitic feldspar porphyry and a swarm of syenite porphyry dykes, all of which are cut by a series of *en echelon* lenses of breccia. Pyrite, molybdenite, fluorite, chalcopyrite, sphalerite, hematite, and magnetite are present.

WORK DONE: 1972 – geochemical soil survey, biogeochemical survey, and self profile test pit on Deer 27 and 28 by West Coast Mining & Exploration Ltd.; 1973 –topography mapped; surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 21 line-miles; IP survey, 10 line-miles; and geochemical soil and rock chip survey, 609 samples, 21 line-miles covering Camel 1, 3, 5, Deer Fraction, and Deer 27-29, 31, 33, 34.

REFERENCES: *B.C. Dept. of Mines*, Bull. 9, 1940, p. 16 (MIDAS); Assessment Reports 4236, 4867.

FUKI, DONEN (82E/NE-15, 41) (Fig. A, No. 37)

LOCATION: Lat. 49° 33' Long. 118° 52' (82E/10W)
GREENWOOD M.D. About 35 miles southeast of Kelowna, from 2 to 4 miles west of the Kettle River, extending from Dear Creek to Lassie Lake, at approximately 4,250 feet elevation.

CLAIMS: FUKI 1 to 40, DONEN, totalling approximately 135.

(82E/11E, 6E)

OWNER: NISSHO-IWAI CANADA LTD., 801, 1111 West Hastings Street, Vancouver.

METAL: Uranium.

DESCRIPTION: The local lithology consists of six mappable units: the so-called Anarchist Group of Paleozoic age, the Mesozoic Valhalla and Nelson plutons, the Tertiary Phoenix Group and Plateau Basalt Formation, the Tertiary Coryell plutons, and the Quaternary Beaverdell Formation. Radiometric anomalies equivalent to 0.02 per cent to 0.70 per cent U_3O_8 have been recognized in two different formations over an area 1,200 feet by 2,500 feet. One is in the lower part of the Plateau Basalt Formation consisting mainly of the Lower Cup Lake Basalt Member overlying mudstone, sandstone, and conglomerate, and the other is in the Phoenix Group.

WORK DONE: Surface diamond drilling, 4,240 feet covering Donen 281-320.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 43; Assessment Report 4630.

IVY, CAPCO, MAY (82E/NW-36; 82E/SW-29, 103, 104) (Fig. A, No. 40)

LOCATION: Lat. 49° 30′ Long. 119° 08′ (82E/11E, 6E)
GREENWOOD M.D. Twenty miles east of Penticton, extending north from Carmi Creek to Ferroux Creek and including the town of Carmi.

CLAIMS: IVY, CAPCO, MARY-O, JUSTIN, etc., totalling approximately 175 claims and Mineral Lease M-290 comprising MAY (Lot 2355).

OWNER: J. V. HINKS, 755 Francis Avenue, Kelowna.

METALS: Molybdenum, copper.

DESCRIPTION: Molybdenite with minor pyrite, chalcopyrite, and associated fluorite occurs in a breccia pipe within the contact zone of Cretaceous granodiorite.

WORK DONE: Linecutting.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 44; Assessment Report 4682.

ROSEMONT (82E/NW-46) (Fig. A, No. 25)

LOCATION: Lat. 49° 31′ Long. 119° 01′ (82E/11E)
GREENWOOD M.D. About 7 miles northeast of Beaverdell, astride St. John Creek, at approximately 4,400 feet elevation.

CLAIMS: QUIS 1 to 4.

OWNER: Herman O. Plank.

OPERATOR: AUSTRO-CAN EXPLORATIONS LTD., 2050, 777 Hornby Street, Vancouver V6Z 1S4.

METALS: Gold, silver.

DESCRIPTION: The claims are underlain by the Wallace Formation consisting largely of granitized sedimentary rocks, some of which are limy, which have been intruded and surrounded by quartz diorite. Pyrite and pyrrhotite with minor chalcopyrite are present in the silicified wallrock.

WORK DONE: VLF EM survey, 3.2 line-miles covering Quis 1-4.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1937, p. D23; Assessment Report 4521.

CU (ARLINGTON, CAPTAIN GORDON) (82E/NW-1, 15) (Fig. A, No. 41)

LOCATION: Lat. 49° 35' Long. 119° 05' (82E/11E)
GREENWOOD M.D. Twenty-four and one-quarter miles east-northeast of Penticton, extending westerly from the top of Arlington Mountain and south from the south end of the Arlington Lakes.

CLAIMS: CU 1 to 14, 16.

OWNER: D. C. MITCHELL, 928 Mapledale Place SE., Calgary, Alta.

METAL: Copper.

DESCRIPTION: In the claim area, gneissic diorite and quartz diorite are traversed by chlorite-biotite-hornblende schist zones and intruded in the northeast by porphyritic granite of the Beaverdell batholith. Chalcopyrite and pyrite occur in quartz veins in the diorite, and in the schist bands; in the schist they are sparsely disseminated, but locally form massive lenses.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical soil survey, 176 samples taken and dithizone-tested for total heavy metals covering CU 3-14 and 16.

REFERENCES: *Geol. Surv., Canada,* Mem. 79, p. 129; Assessment Report 4720.

ELK, DKD, BRU (82E/NW-5, 6, 41-45) (Fig. A, No. 24)

LOCATION: Lat. 49° 36' Long. 119° 05' (82E/11E)
GREENWOOD M.D. Twenty-six and one-half miles southeast of Kelowna, south of Arlington Lakes, astride the West Kettle right-of-way.

CLAIMS: DKD 1 to 6, BRU 15 to 23.

OWNER: K. F. BRUNNING, 424 Lake Moraine Road SE., Calgary, Alta.

METALS: Copper, molybdenum, lead, zinc, iron.

DESCRIPTION: The claims are mainly underlain by gneissic quartz diorite and diorite. These rocks contain inclusions of Anarchist greenstone in the south part of the property which is cut by a band of chlorite-biotite-hornblende schist along the east side. Tertiary basalt forms a capping along the western edge of the claims. Chalcopyrite, sphalerite, galena, and molybdenite occur in quartz veins cutting altered diorite. Chalcopyrite also occurs with pyrite in and near shear zones in all three older rocks.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical soil survey, 150 samples taken on 200 by 750-foot grid spacing and tested with dithizone in a field laboratory, covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 407; 1971, p. 399; Assessment Report 4461.

FAP, SIG, DAN (82E/NW-48) (Fig. A, No. 43)

LOCATION: Lat. 49° 37' Long. 119° 51' (82E/12W)
OSOYOOS M.D. Approximately 7 miles west of Summerland, astride Trout Creek and the Canadian Pacific Railway, extending east from Crump station.

CLAIMS: FAP 1 and 2, SIG 1 to 11, DAN 1 to 8, APIA 1 to 12, OCTO 1 to 4, SUN 1 and 2.

OWNER: AUSTRO-CAN EXPLORATIONS LTD., 2050, 777 Hornby Street, Vancouver V6Z 1S4.

METAL: Copper.

WORK DONE: VLF EM survey, reading taken at 50-foot intervals, and 5.7 miles of linecutting covering Fap 1 and 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 392; Assessment Report 4691.

ROY (Fig. A, No. 8)

LOCATION: Lat. 49° 58' Long. 119° 42' (82E/13E)
VERNON M.D. Ten and one-half miles northwest of Kelowna, surrounding Lambly Lake and extending north astride Lambly Creek.

CLAIMS: ROY 59 to 66, 89 to 112, 119 to 122, 128 to 135, A 1 and 2, A Fraction.

OWNERS: Wharf Resources Ltd. (formerly French Exploration Limited) and Coseka Resources Limited.

OPERATOR: WHARF RESOURCES LTD., 2190, 1055 West Hastings Street, Vancouver.

METALS: Copper, zinc, cadmium.

DESCRIPTION: Most of the grid area is reportedly underlain by Cache Creek Group rocks which are overlain by, or in contact with, Eocene or Oligocene andesites, tuffs, or shales east of Lambly Lake.

WORK DONE: Linecutting and ground magnetometer survey, 15 line-miles covering most of the claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 407; Assessment Reports 4242, 4272.

PB (Fig. A, No. 42)

LOCATION: Lat. 49° 45' Long. 119° 08' (82E/14E, 11E)
GREENWOOD M.D. Seventeen miles southeast of Kelowna, astride the Canadian Pacific Railway, one-half mile east of Hydraulic and Haynes Lakes, at approximately 3,900 feet elevation.

CLAIMS: PB 81 to 179.

OWNER: NISSHO-IWAI CANADA LTD., 801, 1111 West Hastings Street, Vancouver.

(82E/16W)

DESCRIPTION: Plateau basalt, with a thin layer of sandstone and conglomerate at its base, unconformably overlies Coryell intrusions and older rocks. Anomalous radioactivity was found in the sandstone and conglomerate and locally in vesicular basalt.

WORK DONE: Claims surveyed; surface geological mapping, 1 inch equals one-half mile and radiometric survey, 13 line-miles covering PB 91, 100, 114, 115, 117, 120, 127, and 139; surface diamond drilling, eight holes totalling 1,962 feet on PB 81-140.

REFERENCE: Assessment Report 4629.

PAY DAY (82E/NE-37) (Fig. A, No. 104)

LOCATION: Lat. 49° 53′ Long. 118° 29′ (82E/16W)
VERNON M.D. Two and one-quarter miles east-northeast of Lightning Peak, immediately west of Rampalo Creek, at approximately 6,100 feet elevation.

CLAIMS: PAY DAY 1 and 2.

OWNER: K. L. DAUGHTRY, R.R. 4, Vernon.

METALS: Silver, zinc, copper, lead, minor gold.

DESCRIPTION: Metamorphosed calcareous tuff of the Anarchist Group of Upper Paleozoic to Mesozoic age has been broken by several slips and shear zones and injected by many calcite veins and veinlets. Pyrite, sphalerite, chalcopyrite, and galena occur as disseminated grains, fracture fillings, stringers, blebs, and massive lenses in quartz-carbonate gangue in intensely altered, fractured, and faulted rock.

WORK DONE: Geological mapping of the Pay Day 2 adit at a scale of 1 inch equals 20 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 300 (WATERLOO NO. 3); Assessment Report 4857.

NELSON 82F

LIZ B (82F/SE-5) (Fig. A, No. 115)

LOCATION: Lat. 49° 12′ Long. 116° 34′ (82F/2E)
NELSON M.D. Seven and one-half miles north-northwest of Creston, on Wilds Creek, between 2,200 and 4,000 feet elevation.

CLAIMS: LIZ B 1 to 4, TAG 1 to 5.

OWNER: ASPEN GROVE MINES LTD., 3428 East 28th Avenue, Vancouver.

METALS: Silver, lead, zinc.

DESCRIPTION: Pyrite, sphalerite, and galena are present in fractures and along layers in limestone and quartzite on the Liz B claims.

WORK DONE: Linecutting, 5 miles of grid.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 322; Assessment Report 4888.

INVINCIBLE, EAST DODGER (82F/SW-234) (Fig. A, No. 152)

By R. I. Thompson

LOCATION:	Lat. 49° 06′ Long. 117° 13′ (82F/3E) NELSON M.D. Six and one-half miles south-southeast of Salmo, on Iron Mountain, at 5,000 feet elevation.
CLAIMS:	PICKWICK (Lot 12087), MARK TAPLEY (Lot 23227), BRYCE FR. (Lot 14890), INVINCIBLE (Lot 12084), CODY FR. (Lot 14899), plus other adjoining claims.
OWNER:	CANEX PLACER LIMITED, 700, 1030 West Georgia Street, Vancouver; mine office, Salmo.
METAL:	Tungsten (production shown on Table I).
DESCRIPTION:	

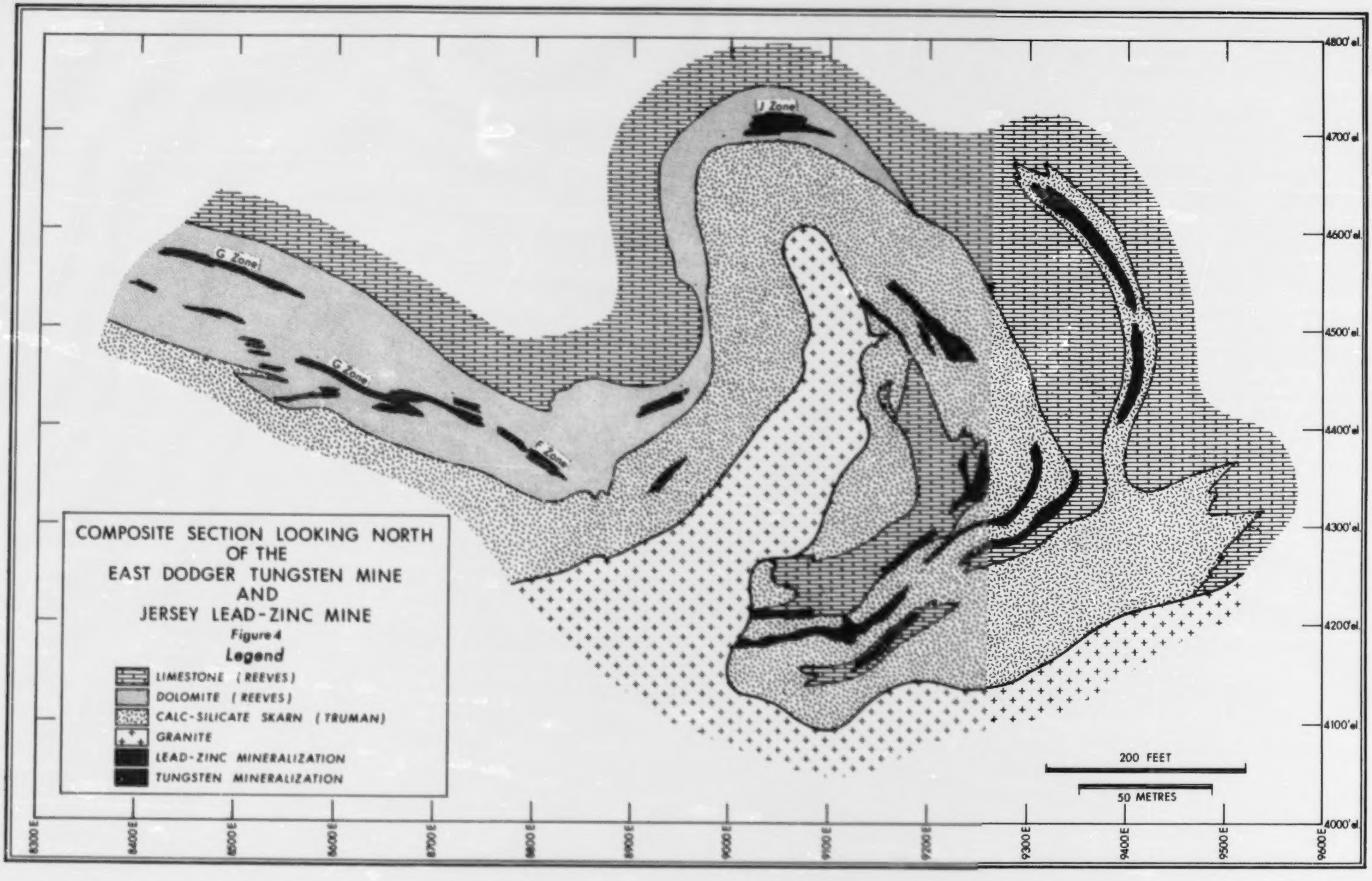
EAST DODGER: The East Dodger tungsten orebody was found as a result of drilling to test an easterly extension of the Jersey lead-zinc mine. The orebody was brought into production in 1970 to complement the mining of the Invincible orebody. Access to the mine is from the 4200 Dodger crosscut, the portal of which is on the west slope of Iron Mountain. Trackless mining methods were used. The main workings are between 4100 and 4400 levels and in an area between mine coordinates 8900-9200E and 6900-7600N (*see* Fyles and Hewlett, 1959, Fig. 9).

The orebody is within parts of the following claims – Pickwick (Lot 12087), Mark Tapley (Lot 12117), and Bryce Fraction (Lot 14890). Mining operations were terminated in September of 1973 due to lack of accessible ore.

Tungsten mineralization (scheelite) at the East Dodger mine occurs with garnet-bearing skarn adjacent to the granitic Dodger stock, where the stock intrudes the upper limb of the recumbent Jersey anticline. The relationship of the orebody to the surrounding geology is shown diagrammatically on Figure 4 compiled from several sections belonging to Canex Placer Limited. Mineralization is confined to skarn beds within the Truman and Reeves Members of the Laib Formation which are contained within a re-entrant, or trough, of the Dodger stock formed by a tongue of granite extending upward from the main intrusion. In the area mined the orebody is nearly horizontal at its western contact with the stock but rises rapidly eastward and is overturned at its eastern extremity. Figure 4 also shows the relationship between the East Dodger tungsten orebodies and the lead-zinc orebodies of the Jersey mine. They occur within the lower part of the Reeves Member and are older than the Dodger stock and the tungsten orebodies.

In the mine area, the Truman Member consists of variegated calc-silicate skarn, quartzitic argillite, micaceous quartzite, and marble; the Reeves Member comprises banded grey and white medium to coarse crystalline marble.

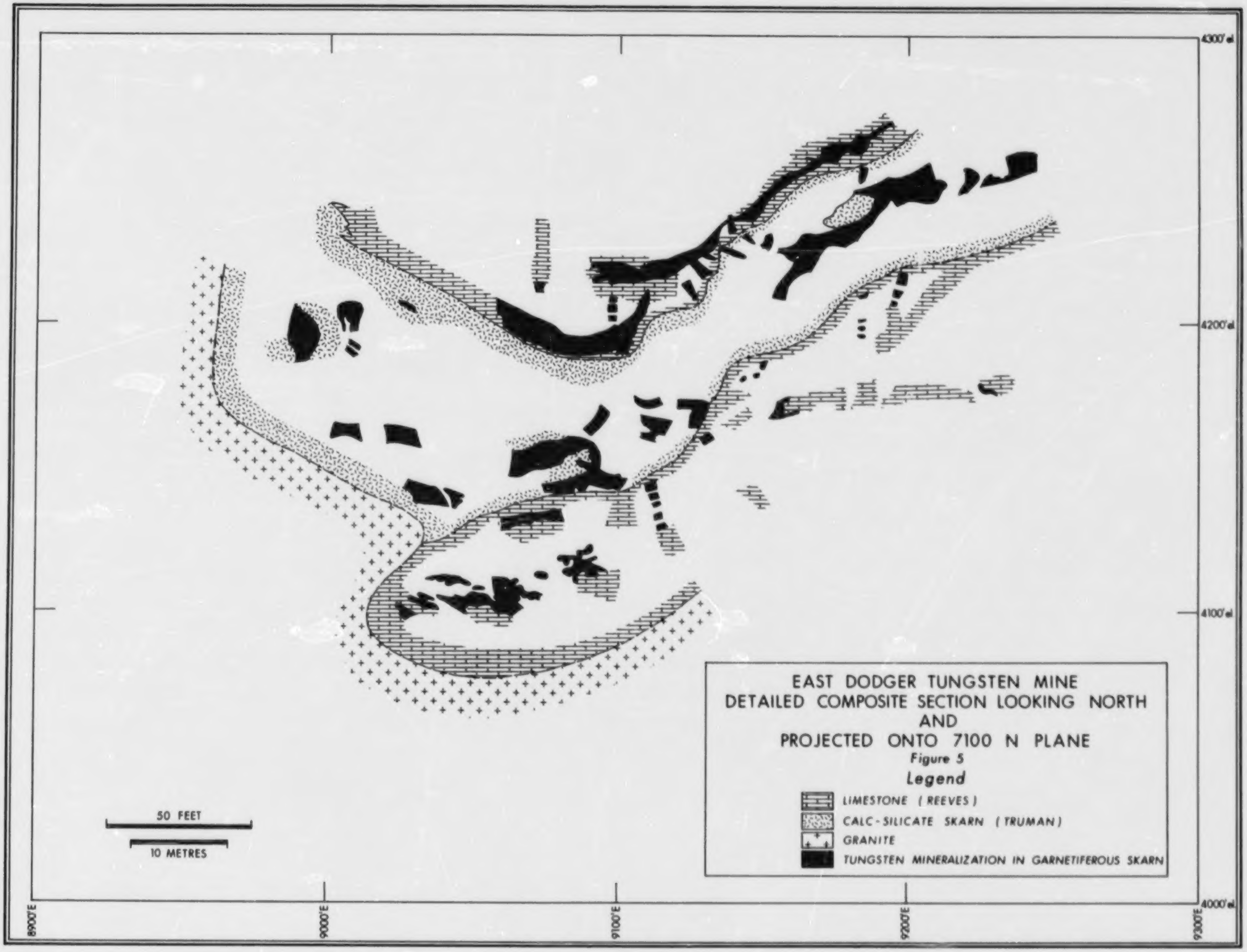
The orebody consists of three mineralized zones called the upper lime, middle skarn, and lower lime zones. In each, scheelite occurs in light brown and green garnetiferous diopside skarn. The upper and lower ore zones are bounded by marble whereas the middle zone is in contact with unmineralized skarn, argillite, and marble of the Truman Member. The tungsten ore is roughly conformable with layering but is not stratiform. Individual mineralized areas have irregular outlines, are discontinuous along layers, and may transect layering. Continuity is further disrupted by numerous crosscutting granite and lamprophyre dykes. Scheelite ore normally occurs within or coincident with garnet-bearing zones.



COMPOSITE SECTION LOOKING NORTH OF THE EAST DODGER TUNGSTEN MINE AND JERSEY LEAD-ZINC MINE

Figure 4

Legend
LIMESTONE (REEVES)
DOLOMITE (REEVES)
CALC-SILICATE SKARN (TRUMAN)
GRANITE
LEAD-ZINC MINERALIZATION
TUNGSTEN MINERALIZATION
J Zone
G Zone
G Zone
F Zone
200 FEET
50 METRES
4800' el.
4700' el.
4600' el.
4500' el.
4400' el.
4300' el.
4200' el.
4100' el.
4000' el.
8300 E
8400 E
8500 E
8600 E
8700 E
8800 E
8900 E
9000 E
9100 E
9200 E
9300 E
9400 E
9500 E
9600 E



EAST DODGER TUNGSTEN MINE
DETAILED COMPOSITE SECTION LOOKING NORTH
AND
PROJECTED ONTO 7100 N PLANE

Figure 5

Legend
LIMESTONE (REEVES)
CALC-SILICATE SKARN (TRUMAN)
GRANITE
TUNGSTEN MINERALIZATION IN GARNETIFEROUS SKARN
50 FEET
10 METRES
4300' el
4200' el
4100' el
4000' el
8900' E
9000' E
9100' E
9200' E
9300' E

Detailed nature of ore zones is shown on Figure 5, a compilation of four sections, 25 feet apart, projected into a common plane (7100N). Figure 6 is a lower hemisphere plot of poles to bedding which shows a regular distribution and defines a fold axis trending 190 degrees and plunging 10 degrees. The geology was projected along this orientation into the 7100N plane of section to construct Figure 5. Contacts between the zones are shown to be regular, defining distinct lithological breaks, but in fact the contacts are discontinuous gradations of skarn, argillite, and marble.

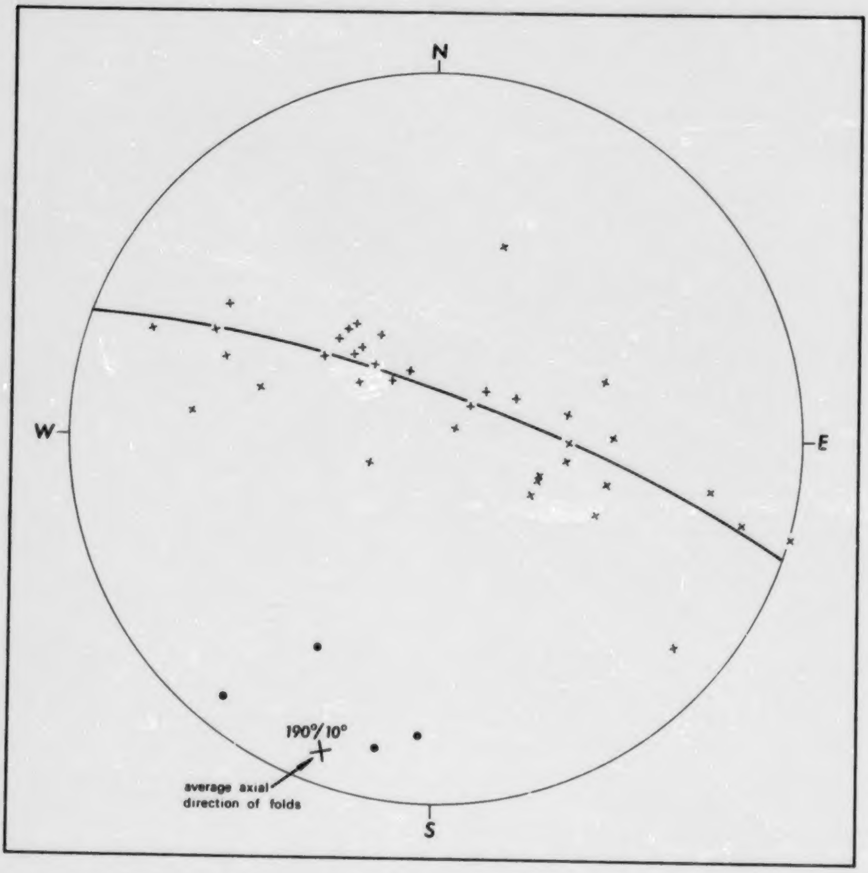


Figure 6. Lower hemisphere equal area plot of poles to bedding (+) and fold hinge direction (.) across the East Dodger mine at approximately 7100N and between 8975E and 9250E.

Mining was selective and confined to the more gently dipping parts of the ore zones, in particular the middle skarn zone which is thickest and has the greatest lateral continuity. Average width of ore mined was 8 to 10 feet but the thickness of the middle skarn zone exceeded 30 feet near its western limit adjacent to the Dodger stock.

Stratigraphic and structural relations in the Jersey anticline at Iron Mountain are illustrated diagrammatically on Figure 7 (taken from Fyles and Hewlett, 1959, p. 68). Complex interdigitations of the Truman and Reeves Members result from complex recumbent isoclinal folding and thrust faulting. The East Dodger mine is in the right-side-up limb near the contact of these two formations, and the major distribution of rock units is probably governed by these structures which were subsequently refolded about more steeply dipping axial planes and intruded by the Dodger stock. The presence of attenuated isoclinal folds in the mine with axial planes parallel to the regional layering support this interpretation.

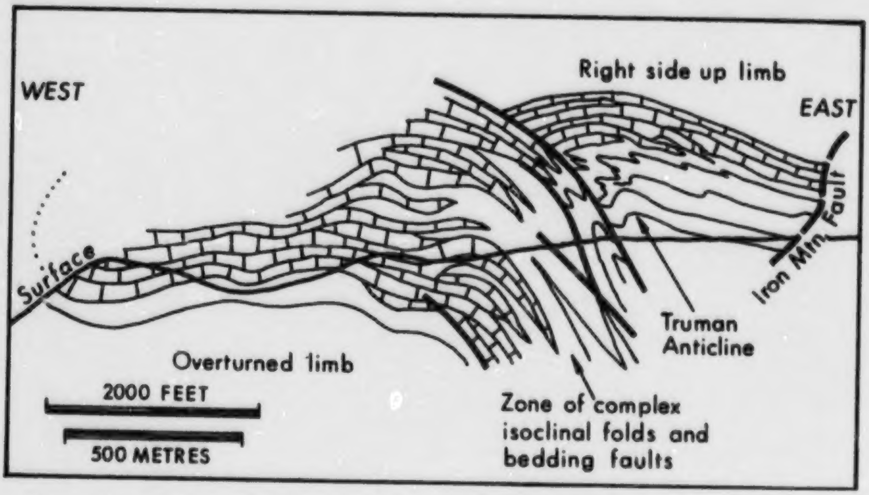


Figure 7. Diagrammatic section of the Jersey anticline on the south slope of Iron Mountain, showing the Reeves limestone (pattern) and underlying Truman Member.

INVINCIBLE: The Invincible orebody is adjacent to the western margin of the Dodger stock where it transects flat-lying beds of the Reeves limestone. It is on the Invincible (Lot 12084) and Cody Fraction (Lot 14899) claims between mine coordinates 9500N to 10,000N and 7500E to 8800E (*see* Fyles and Hewlett, 1959, Figures 9 and 10, section E-E'); elevation of the main workings is between 3,300 and 3,600 feet. The orebody is rectangular in plan and trends north 20 degrees east. Access is by means of a decline trackless haulageway from the west slope of Iron Mountain.

The Invincible orebody is in the overturned limb of the Jersey anticline (Fig. 7) and is bounded above and below by skarn and argillite of the Truman and Emerald Members of the Laib Formation respectively. Most of the tungsten ore (scheelite) occurs in lenticular zones which extend at a high angle from the granitic stock, more or less conformable with layering of the marble. In cross section the ore appears as irregular jagged zones to which the descriptive term 'ore flame' was applied by mine geologists. In longitudinal section the flames are discontinuous and irregular. Ore zones extend up to 80 feet from the stock, and may be more than 10 feet thick, but most ore does not extend beyond 20 feet from the stock and is typically less than 8 feet thick. Continuity of ore along strike seldom exceeds a few tens of feet. Ore grades as high as 7.6 per cent WO_3 (across 1.6 feet) were encountered. However, 0.75 to 1.50 per cent WO_3 are more typical of ore-grade material.

Some of the ore zones comprise aggregates of angular rock fragments enclosed in secondary coarse crystalline quartz; the scheelite is contained within the fragments which consist of diopside and garnet-rich skarn.

WORK DONE:

Production from the East Dodger and Invincible mines began in October 1970 and ceased in September 1973, bringing to an end more than 25 years of continuous mining of lead-zinc and tungsten ore on Iron Mountain by Canex Placer Limited. Between March 1971 and September 1973, 282,779 tons of ore with an average grade of 0.65 per cent WO_3 was produced from the Invincible mine and between May 1970 and August 1973, 225,094 tons with an average grade of 0.54 per cent WO_3 was produced from the East Dodger. On September 28 and 29, the entire plant and townsite were disposed of by auction and clean-up including removal of the buildings was proceeding at the end of the year and is expected to be complete late in 1974.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 47, 48; Fyles, James T. and Hewlett, C. G., 1959, Stratigraphy and Structure of The Salmo Lead-Zinc Area, *B.C. Dept. of Mines & Pet. Res.*, Bull. 41.

HB (82F/SW-4) (Fig. A, No. 118)

By P. E. Olson

LOCATION:	Lat. 49° 09′	Long. 117° 12′	(82F/3E)

NELSON M.D. Four and one-half miles southeast of Salmo, on the west side of Aspen Creek, one-half mile north of Sheep Creek.

CLAIMS: HB (Lot 12672), GARNET (Lot 10809), ZINCTON (Lot 10810), and many other Crown-granted and located claims.

OWNER: COMINCO LTD., Trail.

METALS: Lead, zinc (production shown in Table I).

DESCRIPTION:

The HB mine is located within the Kootenay Arc in an assemblage of latest Proterozoic and Early Paleozoic sedimentary rocks. These units comprise quartzites and argillites overlain successively by limestones and argillites. Mineralization occurs in dolomitized limestone of the Reeves Formation.

The HB deposit consists of the main mine zone and a separate zone referred to as the Garnet orebody. The main mine is contained within a large fold of the Reeves limestone where sulphides occur as steeply dipping stringers or in flat-lying breccia zones. This orebody is limited by structural disturbance to the south.

Mineralization consists of pyrite, sphalerite, and galena; the lead-zinc ratio being 2:9.

WORK DONE:

The mill started in February and operated continuously throughout the year.

Stoping was done by jackleg slashing in the smaller ore sections and by longhole methods in the main mine. Broken ore was slushed to ore passes and then hauled from the mine via diesel-powered conventional trains.

Trailings were piped from the mill to a tailings pond area about 2 miles south of the operation. Testing of the main tailings dam was carried out during the fall, prior to raising this structure. The pondage area was cleared of old trees prior to being used.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 48.

NUGGET (82F/SW-40) (Fig. A, No. 117)

By P. E. Olson

LOCATION: Lat. 49° 10′ Long. 117° 07′ (82F/3E)
NELSON M.D. Seven and one-half miles east-southeast of Salmo, 1.2 miles due south of Reno Mountain, at 6,100 feet elevation.

CLAIM: NUGGET (Lot 8341) Crown-granted claim.

OWNER: S. A. ENDERSBY, 1124 Lee Street, White Rock.

METAL: Gold (production shown on Table I).

DESCRIPTION: The Nugget workings are located in the Sheep Creek area where gold-bearing quartz veins lie within quartzites of the Quartzite Range Formation.

WORK DONE: Selected dump rock was shipped to the Trail smelter.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1958, p. 38; 1961, p. 68; *B.C. Dept. of Mines & Pet. Res.,* Bull. 31, pp. 26, 31, 40, 77.

RENO (82F/SW-36) (Fig. A, No. 116)

By P. E. Olson

LOCATION: Lat. 49° 11′ Long. 117° 08′ (82F/3E)
NELSON M.D. Seven miles east of Salmo, on the southwest slope of Reno Mountain, at 6,500 feet elevation.

CLAIM: RENO (Lot 12684) Crown-granted claim.

OWNER: S. A. ENDERSBY, 1124 Lee Street, White Rock.

METAL: Gold (production shown on Table I).

DESCRIPTION: The Reno mine was a major gold producer within the Sheep Creek camp. Production came from northerly trending quartz veins which cut the Quartzite Range Formation.

WORK DONE: Some ore was salvaged from dumps and shipped to the Trail smelter.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 400; 1972, pp. 48, 49 (Sheep Creek Camp).

JACK POT (82F/SW-12 to 15) (Fig. A, No. 44)

LOCATION: Lat. 49° 15′ Long. 117° 09′ (82F/3E, 6E)
NELSON M.D. Six and one-half miles northeast of Salmo, extending southwest from the junction of Porcupine and Active Creeks, astride and to the west of Spot Creek.

(82F/3W)

CLAIMS: HUNTER V (Lot 2212), DOUBLE STANDARD (Lot 2213), MERCIA FR. (Lot 2224), ELDORADO (Lot 5198), CHIHUAHUA (Lot 5199) Crown-granted claims plus INK SPOT, JACK POT, ACE, JAMESONITE, CANADIAN BOY, CANADIAN GIRL, TWO SPOT, SPOT Fraction, CHIEF, JAY, CHIEF Fraction, JAY Fraction, JAMESONITE Fraction, ELM 5 Fraction, RUSH 1, RUSH 1 Fraction.

OWNER: New Jersey Zinc Exploration Company (Canada) Ltd.

OPERATOR: COMINCO LTD., 200 Granville Square, Vancouver.

METALS: Lead, zinc, minor cadmium.

DESCRIPTION: The claims are underlain by isoclinally folded Lower Cambrian carbonate rocks of the Mural Formation in the south Kootenay Arc. Lead-zinc mineralization localized in dolomitized structures includes massive sulphides within dolomite envelopes. This is described as a concordant Salmo-subtype deposit.

WORK DONE: Surface diamond drilling, six holes totalling 2,100 feet on Two Spot.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, p. 241; *B.C. Dept. of Mines & Pet. Res.,* Bull. 41, pp. 121-126.

ANNEX, REEVES MacDONALD MINE (82F/SE-26 to 29, 219) (Fig. A, No. 119)

By P. E. Olson

LOCATION: Lat. 49° 01' Long. 117° 22' (82F/3W)
NELSON M.D. At Remac, extending north from the International Boundary on both sides of the Pend-d'Oreille River.

CLAIMS: A large block of Crown-granted and located claims in and around Remac including ANNEX 1 (Lot 14070), INTERNATIONAL LEAD 2 (Lot 12492), DREADNAUGHT (Lot 14034), and RIVER (Lot 14036).

OWNER: REEVES MacDONALD MINES LIMITED, Remac.

METALS: Lead, zinc (production shown on Table I).

DESCRIPTION: The Reeves and adjoining ore zones at Remac are mainly faulted sections of one main ore zone in the Reeves limestone. The limestone has been dolomitized and subsequently replaced in part by galena, sphalerite, and pyrite.

WORK DONE:

While some ore was produced at the Reeves mine on a salvage basis, the main supply of ore came from the Annex mine on the south side of the Pend-d'Oreille River. The Annex mine is developed by a long adit and an internal shaft. The orebodies in the Annex are developed by haulage and access levels and are stoped by means of sublevels which are slashed out to the full width of the orebodies on 25-foot vertical intervals. The remaining ore is drilled by longhole methods. Broken ore is slushed into chutes and hauled by cars to the shaft pocket. After hoisting, the ore is hauled by train to a surface dump, then loaded into dump trucks and hauled to the crushing plant via about 1 mile of road.

Development amounted to 9,000 feet and diamond drilling amounted to 7,000 feet during the year. During the second half of 1973, an effort was made to find sufficient ore to justify construction of a tailings pond and upgrading of main underground workings.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 49.

JOB (Fig. A, No. 9)

LOCATION: Lat. 49° 02′ Long. 117° 53′ (82F/4W)
TRAIL CREEK M.D. Four miles southwest of Rossland, astride the Rossland-Cascade Highway, extending southwest from the Ivanhoe Ridge.

CLAIMS: JOB 1 to 46, 48 to 51, JOB 47 Fraction.

OPERATOR: MINERAL RESOURCES INTERNATIONAL LIMITED, 100, 330 Fifth Avenue SW., Calgary, Alta.

DESCRIPTION: The claims are underlain by ultrabasic rock, mostly serpentinite. On the west they abut younger Coryell plutonic rocks, mostly syenite, and to the east the serpentine joins altered greenstones of the Rossland Formation. Some of the serpentine is highly altered with pronounced development of steatite. Magnetite and chromite are present with the serpentine in a diatreme and in several dykes.

WORK DONE: Magnetometer survey covering all claims.

REFERENCE: Assessment Report 4269.

BLUE BIRD (82F/SW-145, 146) (Fig. A, No. 124)

By P. E. Olson

LOCATION: Lat. 49° 04′ Long. 117° 48′ (82F/4W)
TRAIL CREEK M.D. One-half mile south of the Rossland municipal boundary, astride Trail Creek, at 2,900 feet elevation.

CLAIMS: BLUE BIRD (Lot 1053), COPPER QUEEN (Lot 1210), OLLA PODRIDA (Lot 799) Crown-granted claims.

OWNER: Ross Island Mining Co. Ltd.

OPERATOR: STANDONRAY MINES LTD., 2086 St. Paul Street, Rossland.

METALS: Gold, silver, lead, zinc (production shown on Table I).

DESCRIPTION: The Blue Bird vein strikes westerly, is very steep, and is enclosed in volcanic rocks of the Mount Roberts Formation and augite porphyry. The ore is very complex, containing galena, sphalerite, pyrite, arsenopyrite, stibnite, and pyrrhotite in a gangue of quartz.

WORK DONE: A mill, erected at the property in 1972, was put into operation but failed to produce satisfactory concentrates. Consequently, ore was shipped directly to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 49, 50.

IXL (82F/SW-116) (Fig. A, No. 121)

By P. E. Olson

LOCATION: Lat. 49° 04′ Long. 117° 50′ (82F/4W)
TRAIL CREEK M.D. About 2 miles west of the centre of Rossland, on the southeast slope of O.K. Mountain, at 3,300 feet elevation.

CLAIM: IXL (Lot 679).

OPERATOR: J.A. RUELLE, Rossland (under lease).

METAL: Gold (production shown on Table I).

(82F/4W)

DESCRIPTION: Narrow, gold-bearing veins are located in fine-grained andesite of the Mount Roberts Formation. In places, the andesite is altered to serpentine or peridotite and is cut by northerly trending lamprophyre dykes. Gold values are erratic and hence ore shoots are small.

WORK DONE: Underground rehabilitation and some stoping were done by lessees who hand sorted about two sacks of very rich gold ore and also shipped a small amount of ore to the Trail smelter.

REFERENCE: *Minister of Mines, B.C.* Ann. Rept., 1967, p. 235.

MIDNIGHT (82F/SW-119) (Fig. A, No. 122)

By P. E. Olson

LOCATION: Lat. 49° 04' Long. 117° 50' (82F/4W)
TRAIL CREEK M.D. About 2 miles west of the centre of Rossland, on the southeast slope of O.K. Mountain, at 3,200 feet elevation.

CLAIMS: MIDNIGHT (Lot 1186) Crown-granted claim and several adjoining claims.

OWNER: Tull Mines Ltd.

OPERATOR: CONSOLIDATED CINOLA MINES LTD., 1650, 777 Hornby Street, Vancouver.

METAL: Gold (production shown on Table I).

DESCRIPTION: The principal country rock in the vicinity of the property is fine-grained andesite of the Mount Roberts Formation, locally altered to serpentine. The Midnight vein is somewhat irregular with a northerly strike and steep westerly dip. Gold is visible in parts of the vein.

WORK DONE: About 219 tons of ore, mainly cleaned up from the idle mill on the property, was shipped to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 403.

COLUMBIA, KOOTENAY (82F/SW-150, 151) (Fig. A, No. 120)

By P. E. Olson

LOCATION: Lat. 49° 05' Long. 117° 47' (82F/4W)
TRAIL CREEK M.D. One mile northeast of the centre of Rossland, on the east side of Columbia Kootenay Mountain, at 3,500 feet elevation.

CLAIMS: COLUMBIA (Lot 694), KOOTENAY (Lot 697), and adjoining Crown-granted claims.

OWNER: Cominco Ltd.

OPERATOR: ROSSLAND MINING SCHOOL, Rossland.

WORK DONE: The property was mined to known limits of ore and then left idle for many years. In 1973 the property was turned over to the Rossland Mining School for training purposes. Services were provided, buildings erected, and sites prepared for open-pit and underground training of mine operators. The school operated throughout the year, training approximately 150 men.

REFERENCES: *Geol. Surv., Canada,* Mem. 77, p. 128; *Minister of Mines, B.C.,* Ann. Rept., 1941, p. 72.

GIANT, NOVELTY, ST. ELMO **(82F/SW-106 to 109, 134 to 136)**

(Fig. A, No. 45)

LOCATION: Lat. 49° 05' Long. 117° 49' (82F/4W)
TRAIL CREEK M.D. One and one-quarter miles northwest of the centre of Rossland, just outside the municipal boundary, extending south and southwest from the peak of Red Mountain, between 4,000 and 5,000 feet elevation.

CLAIMS: Three mineral leases – M-5 (LITTLE DARLING, Lot 1043), M-14 (VICTOR, Lot 1062), and M-17 (NORTHERN BELLE, Lot 644; VIEW, Lot 645; and SNOWSHOE, Lot 1347); 11 Crown-granted claims – GERTRUDE (Lot 690), SURPRISE (Lot 693), GOLDEN QUEEN (Lot 994), ST. ELMO (Lot 923), CONSOLIDATED ST. ELMO (Lot 924), CLIFF (Lot 921), GIANT (Lot 997), NOVELTY (Lot 958), GOLD KING, EVENING, and EUREKA; four located claims – HARKOFF Fraction, CROWE HUNTER, VERNON Fraction, and HARDOR Fraction.

OWNER: Cascade Molybdenum Mines Ltd.

OPERATOR: MINE FINDERS, INC., 8700 West 14th Avenue, Lakewood, Colorado 80215.

METAL: Molybdenum.

DESCRIPTION: The claims are underlain by brecciated hornfels of the Mount Roberts Formation in which discontinuous disseminations and veinlets of pyrrhotite, arsenopyrite, pyrite, and molybdenite have been observed.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet and geochemical soil survey, 189 samples covering Gertrude, Surprise, Golden Queen, St. Elmo, Consolidated St. Elmo, Victor, Cliff, Gold King, Giant, Harkoff Fraction, Little Darling, Crowe Hunter, Evening, Eureka, Vernon Fraction, and Novelty.

REFERENCE: *Minister of Mines, B.C.,* Ann. Rept., 1968, p. 237.

COXEY MINE **(82F/SW-110, 111, 137)** **(Fig. A, No. 123)**

LOCATION: Lat. 49° 05' Long. 117° 49' (82F/4W)
TRAIL CREEK M.D. One and one-half miles northwest of the centre of Rossland, on the west slope of Red Mountain, between 4,000 and 5,000 feet elevation.

CLAIMS: COXEY (Lot 1221) plus 11 other Crown-granted claims comprising OPHIR, JUMBO, HIGH ORE, NEVADA, GOOD FRIDAY, ONTARIO, MT. VIEW, PEAK, SOUTHERN BELLE, SAM HAYES, EDDIE J and six located claims comprising TOR 1 and 2 Fractions and GREY 1, 2, 9, and 10.

OWNER: The International Nickel Company of Canada Limited.

OPERATOR: MINE FINDERS, INC., 8700 West 14th Avenue, Lakewood, Colorado 80215.

METAL: Molybdenum.

(82F/6W)

DESCRIPTION: Mineralization occurs in brecciated and hornfelsed units of the Mount Roberts Formation and consists of irregularly distributed disseminations and veinlets of pyrrhotite, pyrite, magnetite, molybdenite, scheelite, and chalcopyrite.

WORK DONE: Surface geological mapping, 1 inch equals 50 feet covering Mt. View, Nevada, and Coxey and 1 inch equals 200 feet covering Ophir, Peak, Sam Hayes, Good Friday, Grey 9, Grey 10, Jumbo, and High Ore; geochemical soil survey, 52 samples covering Nevada, Mt. View, Sam Hayes, and Good Friday; surface diamond drilling, 13 holes totalling 4,330 feet on Coxey, Nevada, Mt. View, and Good Friday; C and D pits surveyed at 1 inch equals 50 feet; road construction, one-quarter mile on Mt. View and Good Friday.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 50, 51.

PORTO RICO, SPOTTED HORSE (82F/SW-189, 190) (Fig. A, No. 125)

By P. E. Olson

LOCATION: Lat. 49° 19' Long. 117° 20' (82F/6W)
NELSON M.D. Nine miles north-northwest of Salmo, on Barrett Creek and the divide between Barrett and Craigtown Creeks, between 4,200 and 5,600 feet elevation.

CLAIMS: PORTO RICO (Lot 2385), SPOTTED HORSE (Lot 5375), and several other Crown-granted claims.

OWNER: MURRAY ZULPS AND ASSOCIATES, Ymir.

METALS: Gold, silver.

DESCRIPTION: The vein on this property is a quartz-filled fissure striking northeasterly and dipping around 45 degrees to the northwest. Country rocks comprise augite porphyry and a sill of augite feldspar porphyry with the productive part of the vein in the latter. The vein averages about 2 feet in width and is mineralized by pyrite and gold, the latter grading about 1 ounce per ton in stoped areas.

WORK DONE: Some portals were reopened on the Porto Rico and a small shipment of ore, mined from the backs of drifts, was readied for shipping to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 51.

SILVER KING (82F/SW-176) (Fig. A, No. 46)

LOCATION: Lat. 49° 25' Long. 117° 18' (82F/6W)
NELSON M.D. Four and one-half miles south of Nelson, extending northwest from the lake at the head of Noman Creek to the east branch of Giveout Creek.

CLAIMS: Five located claims – COD Fraction, SHERI Fraction, BRENDA Fraction, JIM Fraction, GOLDENDALE Fraction; Mineral Lease M-60 – IVANHOE (Lot 416); 28 Crown-granted claims – SILVER KING (Lot 141) and Lots 140, 142, 105, 231, 233, 235, 236, 244, 245, 247, 371, 411, 412, 414, 417, 685, 976, 3252, 3254, 3255, 1054, 2541, 7304, 7305, 7436, 12273, and 12274.

(82F/6E)

OWNER: Silver King Mines Ltd.

OPERATOR: SPROAT SILVER MINES LTD., 333, 885 Dunsmuir Street, Vancouver.

METALS: Copper, silver (gold, lead).

DESCRIPTION: The area is underlain by augite porphyries of the Rossland Formation which have been intruded by fine-grained porphyritic syenites to quartz diorites. On the Silver King claim, the intrusion of monzonite stocks and dykes resulted in the development of strong shear and tension fractures which were later mineralized. Orebodies were located at the intersection of three of these veins, striking south 60 degrees east with a vein striking due east-west.

WORK DONE: Linecutting and time-domain IP survey, 10.6 line-miles; geochemical soil survey, 200 samples taken at 200 by 500-foot grid spacing covering Lots 140, 142, 105, 231, 233, 235, 236, 244, 245, 247, 371, 411, 412, 414, 416, 417, 685, 976, 3252, 3254, 3255, 1054, 2541, 7304, 7305, 7436, 12273, 12274, and 7895.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1967, p. 242; Assessment Report 4701.

GOODENOUGH (82F/SW-73) (Fig. A, No. 126)

By P. E. Olson

LOCATION: Lat. 49° 19′ Long. 117° 11′ (82F/6E)
NELSON M.D. Nine and one-half miles north-northeast of Salmo, west of Huckleberry Creek, approximately 1 mile north of Ymir Creek, at 4,300 feet elevation.

CLAIM: GOODENOUGH (Lot 13025) Crown-granted claim.

OPERATORS: E. B. CARLSON, L. MASURA, and P. MARCHINEK, Ymir.

METAL: Gold (production shown on Table I).

DESCRIPTION: The Goodenough lode system lies mainly within schists of the Pend-d'Oreille series and is more or less conformable with foliation of the enclosing rocks. As indicated by stoping, which has been extensive, ore shoots occur mainly in the western workings of the old mine.

WORK DONE: A small shipment of ore was mined and shipped to the Trail smelter.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 440; *Geol. Surv., Canada*, Mem. 191, pp. 34-37.

YMIR (82F/SW-74) (Fig. A, No. 127)

By P. E. Olson

LOCATION: Lat. 49° 20′ Long. 117° 10′ (82F/6E)
NELSON M.D. Ten miles north-northeast of Salmo, approximately 2,000 feet west of Huckleberry Creek, at 3,700 feet elevation.

CLAIMS: YMIR (Lot 1708) Crown-granted claim and several adjoining claims.

OWNER: Murray Zulps.

OPERATOR: A. M. GERUN, Nelson.

METALS: Gold, silver, lead, zinc (production shown on Table I).

(82F/6E)

DESCRIPTION: The Ymir vein is a quartz-filled fissure striking northeasterly and dipping steeply to the northwest. This vein, which varies in width from a few feet to nearly 40 feet, lies within Pend-d'Oreille schists.

WORK DONE: Some rehabilitation work was done and, where backs were down, ore was salvaged and shipped to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 440.

GOLDEN AGE, EUPHRATES (82F/SW-185, 186) (Fig. A, No. 105)

By P. E. Olson

LOCATION: Lat. 49° 23' Long. 117° 13' (82F/6E)
NELSON M.D. Seven and one-half miles south-southeast of Nelson, astride Highway 6, between 3,000 and 4,000 feet elevation.

CLAIMS: PIA 1 to 10, EVA 1 to 9, MIKE 2, 4, 6, 8, A 1 to 8, ACE 1 to 4, PETE 1 to 5, CONTACT 1 to 6.

OWNER: ROBERT MINES LTD., 2050, 777 Hornby Street, Vancouver.

METALS: Gold, silver, lead, zinc, tungsten, copper (production shown on Table I).

DESCRIPTION: The property is underlain by metamorphosed augite porphyry and andesite belonging to the Triassic Rossland volcanic rocks. The schistosity strikes north 40 degrees west and dips southwesterly. A tongue of Nelson granite crops out 800 feet southwest of the Euphrates workings. Mineralization occurs largely in quartz shear zones which strike parallel to the schistosity. Metallic minerals are pyrite, chalcopyrite, sphalerite, tetrahedrite, galena, aikinite, scheelite, gold, and silver.

WORK DONE: Work consisted of completely rehabilitating the main Golden Age adit on Pia 7 which was made ready for further development and production. Approximately 1,500 feet of rail was laid and three stopes were cleaned out and made safe. Waste material, totalling approximately 350 tons, was removed from underground and the drift was widened. Two diamond-drill holes totalling 164 feet were completed on A 3 and 4 claims. A test shipment was made to the Trail smelter. Additional prospecting led to 1,720 square feet of trenching and stripping on Pia 3.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 52.

ICE (82F/SE-74) (Fig. A, No. 47)

LOCATION: Lat. 49° 20' Long. 116° 06' (82F/8E)
FORT STEELE M.D. Twenty-four and three-quarter miles northeast of Creston, surrounding the junction of the Moyie River, south Moyie Creek, and Cooper Creek, at approximately 5,000 feet elevation.

CLAIMS: ICE 1 to 24.

OWNER: COMINCO LTD., Box 2000, Kimberley.

METAL: Titanium.

(82F/9E)

DESCRIPTION: Quartzite and argillite belonging to the middle part of the Aldridge Formation have been intruded by a metagabbro sill (dyke ?). A single diamond-drill hole cored metagabbro only.

WORK DONE: Surface diamond drilling, one hole totalling 221 feet on Ice 12.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 52.

LEADER (WELLINGTON) (82F/NE-60) (Fig. A, No. 26)

LOCATION: Lat. 49° 32′ Long. 116° 08′ (82F/9E)
FORT STEELE M.D. Twelve and one-half miles east of Angus Creek, 5 miles southeast of the east end of St. Mary Lake, up to one-half mile east of Angus Creek, at approximately 5,700 feet elevation.

CLAIMS: JIM 1 to 8.

OWNER: URSUS MINERALS LTD., 2601, 505 Fourth Avenue SW., Calgary, Alta.

METALS: Gold, silver, lead, minor copper, tungsten.

DESCRIPTION: Galena, chalcopyrite, pyrite, (tetrahedrite ?), and scheelite occur with quartz along a fault contact between the Creston and Kitchener-Siyeh Formations. The claims are underlain by argillite and quartzite, which have been intruded by a pegmatitic stock.

WORK DONE: Geochemical soil survey, 255 samples taken on a grid spacing of 200 by 400 feet, 6.5 line-miles, covering Jim 4 and 8.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 53 (JIM); Assessment Reports 661, 4459.

RICE (QUARTZ MOUNTAIN) (82F/NE-55) (Fig. A, No. 128) By P. E. Olson

LOCATION: Lat. 49° 34′ Long. 116° 04′ (82F/9E)
FORT STEELE M.D. Five and one-half miles southeast of the east end of St. Mary Lake, at the head of Sawmill Creek, at 6,100 feet elevation.

CLAIMS: LONE EAGLE (Lot 14951), QUARTZ CREEK (Lot 14952).

OWNER: PETER LANE, 327 Ninth Avenue South, Cranbrook.

METALS: Gold, silica (production shown on Table I).

DESCRIPTION: Massive quartz outcrops near the head of Sawmill Creek, a tributary of Perry Creek from the northwest. Portions of the quartz showings are mineralized with pyrite, chalcopyrite, gold, and silver but the structure is somewhat obscure in spite of trenching and diamond drilling.

WORK DONE: About 1,373 tons of ore was mined from surface showings and shipped to the Trail smelter.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1933, p. 201; 1934, p. E30.

POLARIS (82F/NE-54, 101) (Fig. A, No. 48)

LOCATION: Lat. 49° 37′ Long. 115° 59′ (82G/12W; 82F/9E)
Report on this property in section 82G/12W.

SULLIVAN MINE (82F/NE-52) (Fig. A, No. 129)

By P. E. Olson

LOCATION: Lat. 49° 42′ Long. 116° 01′ (82F/9E; 82G/12W)
FORT STEELE M.D. The operations in and around the Sullivan mine lie within the city limits of Kimberley and extend west to Matthew Creek.

CLAIMS: The company owns 680 Crown-granted claims including SHYLOCK (Lot1385), HAMLET (Lot 1386), HOPE (Lot 1387), GEN FR. (Lot 4050), STONEY FR. (Lot 4051), OWEN SOUND BOY FR. (Lot 6190), MAC (Lot 6189), KING GEORGE (Lot 10210), WINNIE FR. (Lot 11992), XL FR. (Lot 11993), FINY FR. (Lot 11995), MOYIE FR. (Lot 11996), BEN FR. (Lot 11997), TRAIL FR. (Lot 11998), ERIC (Lot 11999), DEER FR. (Lot 12000), ALTA FR. (Lot 12001), KARL (Lot 12002), ETHEL FR. (Lot 12011), SEATON FR. (Lot 12527), JEW (Lot 2409) and 582 located claims including LUKE, LATE, MAR, MAT, etc.

OWNER: COMINCO LTD., 200 Granville Square, Vancouver; mine office, Kimberley.

METALS: Silver, lead, zinc, iron (production shown on Table I).

DESCRIPTION:

MINE GEOLOGY

Stratigraphy: The Sullivan mine ore zone occurs at the transition between the Lower and Middle Aldridge Formations. The footwall stratigraphy comprises a rhythmic succession of thinly stratified graded beds ranging from fine-grained, dirty quartzite to argillite. The rocks overlying the ore zone are thickly bedded and much more arenaceous.

Immediately above the ore zone is a series of repeated siltstones with intercalated argillites which give way to a zone of quartzites, the upper of which lie some 100 to 150 feet above the general ore zone. The immediate footwall is marked by a large lens of intraformational conglomerate which occurs throughout much of the mine area.

Structure: The ore zone at the Sullivan mine occupies a broad anticline which plunges to the north. The crest of the anticline coincides approximately with the western margin of the orebody, which may be described as somewhat similar to an inverted saucer. Beds in the mine generally dip east. Dips in the upper part of the mine are between 0 degrees and 20 degrees while, lower down, dips up to 50 degrees may occur, with the average being between 30 degrees and 35 degrees. Some minor folding and flexing occur in portions of the ore zone, but no systematic trends have been established. A series of faults trending 10 degrees east of north cut through the orebody with a consistent east-side-up displacement ranging from a few feet to more than 100 feet. This group of faults is referred to as 'Sullivan type,' and is typified by the largest member which occurs near the western side of the mine. Just to the north of the mine is a prominent northeast-striking, north-dipping fault. This fault has major displacement, bringing rocks of the Creston Formation into contact with the Aldridge of the mine stratigraphy and involves a stratigraphic displacement in excess of 10,000 feet.

Economic Geology: The Sullivan ore zone is localized within a generally conformable zone between 200 and 300 feet thick. It rests either on the footwall intraformational conglomerate or on the regularly bedded footwall sequence. In the lower portions of the mine, the stratigraphy within the ore zone is extremely regular and consists of a number of interbedded bands of sulphides and barren rock within which sedimentary structures are preserved in great detail.

In the upper portions of the mine, the delicate layering is not present except in small patches. In this upper portion of the mine, large areas of massive ore occur. In addition, there are zones of essentially pure iron sulphide with little or no lead or zinc.

Mineralogy and Petrography: The principal sulphides in the Sullivan mine orebody are pyrrhotite, sphalerite, galena, and pyrite. Chalcopyrite and arsenopyrite are minor constituents. Boulangerite is locally prominent, and jamesonite and tetrahedrite have also been identified. Magnetite is fairly common in some parts of the orebody, and cassiterite is widely present in small amounts. In the oxide zone, sericite and pyromorphite are quite common.

Wallrock Alteration: Extensive and pronounced alteration is associated with large areas of the western portion of the ore zone. In the footwall the most striking feature is an extensive zone of tourmalinization which has given rise to the dark bluish black to brown rock locally referred to as 'chert.' In this rock, the argillaceous fraction of the original sediment has been completely altered to an anastomosing network of tourmaline needles.

WORK DONE:

During 1973, 2,214,415 tons of Sullivan ore was treated at the concentrator which operated for 233 days.

Development driven totalled approximately 32,000 feet, and underground core-hole diamond drilling about 3,900 feet. Backfill totalled 519,940 cubic yards of float rock and cave.

Longhole drilling underground totalled approximately 397,000 feet while surface core-hole drilling totalled approximately 3,600 feet on the Mar 17 and Advance 2 claims.

The U-13-30 pillar blast in August with 81 tons of explosives was the largest blast (tons of explosives) to take place underground at the Sullivan mine to date.

The rock mechanics section continued to work on monitoring techniques to improve mining methods at the Sullivan mine. Extensive surveillance was carried out in relation to subsidence on the surface of the Sullivan mine, including two helicopter surveys.

The ventilation system handled approximately 975,000 cubic feet per minute of primary air.

Intake air heating plants at Nos. 1, 24, and 41 shafts operated from October 1972 to April 1973, using natural gas, with combined input of 44.3 million Btu per hour to heat approximately 650,000 cubic feet per minute. In October 1973, the capacity of No. 24 shaft was increased to provide approximately 300,000 cubic feet per minute of intake air. A direct-fire heater was installed at No. 33 shaft designed to heat approximately 200,000 cubic feet per minute for 50 degrees Fahrenheit maximum design temperature increment of intake air. This requires 12 million Btu per hour input. At the end of 1973, a total of 87,000 cubic feet per minute of intake air was heated by a combined input of 56.3 million Btu per hour.

Oxidation continued in one producing pillar. The area has been isolated from the regular mine ventilation network and the SO_2 gas produced exhausts directly to surface via Nos. 14, 31, 34, and 42 shafts and open caves.

A 550-foot, 8 by 8-foot plywood tunnel was installed at No. 24 shaft to supply No. 1 shaft mine section with intake air relatively low in SO_2 contamination. No. 1 and No. 24 shaft air supply was monitored continuously for SO_2 by autometer recording machines.

Technical Development

(1) *General:* The Sullivan mine technical development department continued to provide services to other mines and divisions within Cominco, and to be involved in cooperative ventures with other companies and government agencies.

(2) *Rock Drilling:* Blasthole diamond drilling of 2 7/8-inch holes in broken ground using improvised equipment was a success and indicated room for further development.

(3) *Explosives:* (a) Operational development of slurry blasting agents in underground operations continued, with appreciable tecnhical improvement achieved; (b) A start was made on investigation of space technology detonating systems which have potential safety features far beyond anything now in regular use in mining; (c) A share was taken in providing data on which shipping rules for ammoniumnitrate/fuel oil explosives were promulgated.

(4) *Backfilling:* Extensive work was done to determine basic design criteria for the Radmark pneumatic backfilling systems.

(5) *Ventilation:* Computer programmes were developed for calculating complicated ventilation systems.

(6) *Sulphide Oxidation:* Oxidation mechanisms for complex sulphide ores having tendency for self combustion were studied and sufficient understanding was developed to be able to indicate when a risk existed, using assay data and a computer programme.

(7) *Hearing Conservation:* Basic work on reverberation and resonance phenomena was started. Significant improvements in protective standards were achieved.

Safety: In 1973 the Sullivan mine had 59 lost-time accidents; there were 11 at the concentrator. Accident frequency per 1,000,000 man-hours worked was 50.8 at the mine and 26.9 at the concentrator. Severity rate per 1,000,000 man-hours worked was 1,770 calendar days at the mine and 1,199 at the concentrator. Fifteen Sullivan mine and concentrator employees obtained or renewed their industrial first-aid certificates, and 38 employees passed their St. John Ambulance first-aid examinations. Twelve Sullivan mine employees obtained their mine-rescue certificates, making a total of 422 since training first started in 1929.

Employees at year end totalled 670 at the mine and 225 at the concentrator.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 54, 55; Assessment Report 4902.

JAG, EVANS, GOODHOPE, FALLER, WHITEFISH (82F/NE-69, 70, 71, 72, 126) (Fig. A, No. 10)

LOCATION: Lat. 49° 34′ Long. 116° 19′ (82F/9W)
FORT STEELE M.D. About 6 miles west-southwest of St. Mary Lake, extending from Meachen Creek up the northwest slope of Mount Evans.

CLAIMS: JAG 1 to 58.

OWNERS: J. A. GILBERT, 4701, Toronto-Dominion Centre, Toronto, Ont. and A. HOPKINS, 810 Duplex Avenue, Toronto, Ont.

METALS: Copper, lead.

DESCRIPTION: The claims worked on contain seven showings, all of them quartz or quartz-calcite veins in shear zones and tension fractures in diorite sills which intrude sedimentary rocks of the Aldridge Formation. In and adjacent to these veins are chalcopyrite, pyrite, pyrrhotite, and minor galena with tetrahedrite and malachite and azurite-staining in places.

WORK DONE: Linecutting and prospecting, 66,500 feet of line; geological mapping; geochemical soil and rock survey, 51,500 feet covering Jag 1-14, 23-33, 35, 37, 57, and 58.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1906, p. 251 (FALLER); 1915, pp. 110-112 (WHITEFISH CREEK AREA); 1920, p. 118 (WHITEFISH); 1934, p. E29 (EVANS); *Geol. Surv., Canada,* Mem. 228, p. 57 (EVANS); *Geol. Surv., Canada,* Paper 52-15, p. 5; Assessment Report 4235.

CHICAGO, SNOW KING (82F/NE-108, 109) (Fig. A, No. 11)

LOCATION: Lat. 49° 34′ Long. 116° 39′ (82F/10E)
NELSON and FORT STEELE M.D. Ten and one-half miles south of the post office at Crawford Bay, near the headwaters on the north side of La France Creek.

CLAIMS: Mineral Leases M-62 (CELEBRATION, Lot 7229) and M-63 (ECHO, Lot 7232); PEG 1 to 14.

OWNERS: E. Denny and J. Denny.

OPERATOR: E. DENNY, R.R. 1, Nelson.

METALS: Lead, zinc.

DESCRIPTION: The claims are underlain by intensely folded limestone, dolomite, argillaceous schist, and chloritic schist possibly of the Horsethief Creek series and a conglomerate thought to be the Toby Formation. Galena, sphalerite, chalcopyrite, pyrite, and some tetrahedrite are present in quartz, calcite, and minor barite veins in siliceous, limonite-stained limestone, as disseminations in brecciated buff dolomite, and as disseminations and replacements in siliceous limestone.

WORK DONE: Linecutting; geochemical silt and soil survey, 52 samples covering Celebration and Peg 5, 9, 11; geological mapping covering Celebration, Echo, and Peg 1, 3-6, 9, 11, 13, 14; trenching on Peg 9; old Snow King adit cleared on Peg 5.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1900, p. 855 (SNOW KING); 1926, pp. 283, 284; Assessment Report 4387.

UNITED COPPER (82F/NE-99) (Fig. A, No. 49)

LOCATION: Lat. 49° 43′ Long. 116° 36′ (82F/10E)
SLOCAN and FORT STEELE M.D. Ten and three-quarter miles east-northeast of Crawford Bay Post Office, extending northeast from Cogle Pass, at the headwaters of Sawyer Creek, between 6,500 and 7,200 feet elevation.

CLAIMS: UNITED COPPER 2, 3, 9 to 12, LIMESTONE 3 to 8, 10 to 12, 14 to 16.

OWNERS: F. W. Cartwright Jr., A. Mores, W. J. Gardner, J. D. Bond, and Cogle Copper Limited.

OPERATOR: COGLE COPPER LIMITED, 704 Railway Street, Nelson.

METALS: Copper, silver, lead, zinc.

DESCRIPTION: Quartz veins and inclusions containing chalcopyrite, sphalerite, galena, pyrite, and pyrrhotite occur along a shear zone and in foliated zones in chlorite schist. Bornite, with silver minerals, occurs as replacements in limestone and quartzite.

WORK DONE: Surface diamond drilling, two holes totalling 85 feet on United Copper 2 and 3; trenching, 1,150 feet on United Copper 3; stripping, 25 by 25 by 15 feet on United Copper No. 2.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 55.

HUMBOLT (82F/NE-47) (Fig. A, No. 50)

LOCATION: Lat. 49° 45′ Long. 116° 39′ (82F/10E, 15E)
SLOCAN and FORT STEELE M.D. Nine miles east of Riondel, astride Crawford Creek, extending from Spring Creek northeast to St. Mary River, between 5,200 and 6,400 feet elevation.

CLAIMS: HUMBOLT (Lot 2015), SAILOR BOY (Lot 2016), JOAN 1 to 71, ELLEN 1 to 3, HOPE 1 to 6, DA-RI 1 and 2, ELEANOR, GEM 3, GEM Fraction, VI 1 to 8, SILVER ACE, SILVER KING, SILVER QUEEN, SILVER JACK, SILVER TEN, SILVER NINE, SILVER EIGHT, SILVER SEVEN, SILVER SIX, SILVER FIVE.

OWNER: ROSE PASS MINES LTD., 630A – 17th Avenue SW., Calgary, Alta.

METALS: Silver, lead, zinc.

DESCRIPTION: Quartz veins in black argillaceous rocks contain galena, sphalerite, chalcopyrite, stannite, and pyrite.

WORK DONE: Surface geological mapping covering Silver Ace, Silver King, Silver Queen, Silver Jack, Silver Ten, Silver Nine, Silver Eight, Silver Seven, Silver Six, and Silver Five; surface diamond drilling, 13 holes totalling 1,920 feet on Humbolt, Joan 2, and Ellen 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 56.

CRAW (Fig. A, No. 51)

LOCATION: Lat. 49° 39' Long. 116° 51' (82F/10W)
SLOCAN M.D. One-half mile southwest of Crawford Bay Post Office, extending down the Crawford Peninsula, surrounding McGregor Lake, at approximately 2,500 feet elevation.

CLAIMS: CRAW 1 to 31.

OWNER: COMINCO LTD., 200 Granville Square, Vancouver.

METALS: Lead, zinc, copper.

DESCRIPTION: The claims are underlain by the Hamill and Badshot Formations and the Lardeau Group of Late Precambrian and Early Paleozoic age. Hamill Formation in the area is represented by pink quartzite and quartz mica schist, the Badshot Formation is coarse-grained limestone, and the Lardeau Formation is black siltstone and argillite. Mineralization consists of a number of mineralized boulders in fill overlying the Badshot limestone.

WORK DONE: Horizontal-loop EM and magnetometer surveys, 18.2 line-miles each covering Craw 1-5, 7-18, 21, 27, and 29; gravity survey, 0.25 line-mile.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 56; Assessment Report 4814.

BJ (Fig. A, No. 29)

LOCATION: Lat. 49° 40' Long. 116° 50' (82F/10W)
SLOCAN M.D. On the west side of the head of Crawford Bay and including Crawford Bay settlement.

CLAIMS: BJ 1 to 8.

OWNER: RICHARD DEANE, 1832 Butte Street, Rossland.

DESCRIPTION: The claims are at least partially underlain by limestone of the Badshot Formation.

WORK DONE: Linecutting and VLF EM survey, 1.6 line-miles covering BJ 1-3.

REFERENCE: Assessment Report 4510.

SILVER HOARD, DELLIE, LITTLE MAY (82F/NE-24) (Fig. A, No. 130)

By P. E. Olson

LOCATION: Lat. 49° 45' Long. 116° 57' (82F/10W)
SLOCAN M.D. Two miles northwest of Ainsworth, immediately south of Cedar Creek, at approximately 4,600 feet elevation.

CLAIMS: Mineral Lease M-365 comprising SILVER HOARD (Lot 10712) and DELLIE Fraction (Lot 10711).

OWNER: Silver Hoard Mines Limited.

OPERATOR: R. B. SAVAGE, Taghum.

METALS: Silver, lead (production shown on Table I).

DESCRIPTION: The Dellie mine workings disclosed mineralization in shear zones near a contact between black argillite and limestone. Folding of the limestone appears to effect a control over mineralization.

WORK DONE: R. B. Savage used a ¾-yard shovel to escavate the main dump and subsequently shipped 891 tons of this material to the Trail smelter. The material shipped to Trail graded around 4.3 ounces per ton silver.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 460; *B.C. Dept. of Mines & Pet. Res.,* Bull. 53, pp. 106-109.

MARMION, MARYLAND (82F/NW-141) (Fig. A, No. 136)

By P. E. Olson

LOCATION: Lat. 49° 45′ Long. 117° 18′ (82F/14W)
SLOCAN M.D. Seven and one-half miles east of Slocan, about 1,000 feet north of Tagart Creek, at approximately 6,000 feet elevation.

CLAIMS: MARMION (Lot 4975) and MARYLAND (Lot 4976).

OWNER: Gordon Cleland.

OPERATORS: M. R. MAZE and partner, Box 398, Castlegar.

METALS: Gold, silver (production shown on Table I).

DESCRIPTION: The property has been developed by a short adit and crosscut at an elevation of approximately 6,000 feet.

WORK DONE: Seven tons of ore, grading around 0.63 ounce per ton gold and 2.0 ounces per ton silver, was mined from the sidewalls and backs of the old workings and shipped to the Trail smelter.

REFERENCE: *Minister of Mines, B.C.,* Ann. Rept., 1941, p. 63.

OTTAWA (82F/NW-155) (Fig. A, No. 132)

By P. E. Olson

LOCATION: Lat. 49° 47′ Long. 117° 24′ (82F/14W)
SLOCAN M.D. Two and one-half miles northeast of Slocan City, 1,000 feet east of Algiers Creek, a tributary of Springer Creek, at approximately 5,000 feet elevation.

CLAIMS: OTTAWA (Lot 4968) and other adjoining claims.

OWNER: Slocan Development Corporation Limited.

OPERATOR: MIKE POZNIKOFF, Slocan City.

METALS: Silver, lead, zinc (production shown on Table I).

DESCRIPTION: The Ottawa mine workings, which are quite extensive, are within a large northerly trending zone of shearing and brecciation. Dips vary from nearly flat to about 45 degrees easterly. Ore zones are usually quite small but carry significant values in silver with minor lead. Quartz and barite are the principal gangue minerals. Country rock is a coarse-grained feldspar porphyry of the Nelson granite.

WORK DONE: Mike Poznikoff produced several small shipments from stopes between No. 8 and No. 9 levels, and above No. 8 level. Ore recovery is a salvage operation around old stopes and is becoming very difficult.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 56.

MARY (82F/NW-208) (Fig. A, No. 137)

By P. E. Olson

LOCATION: Lat. 49° 48′ Long. 117° 17′ (82F/14W)
SLOCAN M.D. Eight and one-half miles east-northeast of Slocan City, immediately west of Timber Creek, between 4,900 and 5,500 feet elevation.

CLAIMS: MARY 1 to 4 located claims which cover the area previously named JUMBO.

OWNERS: S. and Mary Berisoff.

OPERATOR: S. BERISOFF, Silverton.

METALS: Gold, silver, lead, zinc (production shown on Table I).

DESCRIPTION: A flat-dipping shear zone strikes easterly and dips southerly on the south side of Enterprise Creek, immediately west of Timber Creek. Country rock is a feldspar porphyry of the Nelson batholith.

WORK DONE: A short tunnel was driven and about 14 tons of vein material was selected and sent to the Trail smelter.

ANNA (82F/NW-154) (Fig. A, No. 108)

LOCATION: Lat. 49° 48′ Long. 117° 23′ (82F/14W)
SLOCAN M.D. Four miles northeast of Slocan City, on the south slope of Ottawa Hill, extending west from Little Tim Creek, at approximately 5,300 feet elevation.

CLAIMS: SALLY, CHARLES, HENRY, MAY Fraction.

OWNER: SILVER BENN MINES LTD., Box 74, Slocan City.

METAL: Silver.

DESCRIPTION: Native silver, argentite, stephanite, and tetrahedrite occur in siliceous stringers and lenses in two parallel shear zones in granite porphyry of the Nelson batholith.

WORK DONE: A small test hole drilling programme was conducted on the Anna mine, with assay results running from 0.06 to 13.39 ounces of silver per ton.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1927, pp. 271-281; 1960, pp. 76, 77; 1966, p. 219; *Geol. Surv., Canada,* Mem. 184, pp. 167-168.

REPUBLIC (82F/NW-167 to 169) (Fig. A, No. 56)

LOCATION: Lat. 49° 48′ Long. 117° 27′ (82F/14W)
SLOCAN M.D. Two miles north-northeast of Slocan City, astride and extending to the headwaters of Climax and Scorpion Creeks, between 3,300 and 4,650 feet elevation.

CLAIMS: ERIN (Lot 1530), BLACK BESS NO. 3 (Lot 3263), EVENING STAR NO. 9 (Lot 5235), ERIN FR. (Lot 5236), SUNLIGHT FR. (Lot 5319), BONANZA NO. 3 (Lot 5497), REPUBLIC NO. 2 (Lot 5498), AMERICAN EAGLE (Lot 5499), BELL NO. 2 (Lot 5500), VE FR. (Lot 5501), EVENING STAR NO. 9 FR. (Lot 7058), ROSS 1 to 19, ROSS 7 Fraction, AJ Fraction.

(82F/14W)

OWNERS: Tandem Resources Ltd. and D. Vigouret.
OPERATOR: DENU MINES & DEVELOPMENT LTD., 5316 Fleming Street, Vancouver.
METALS: Silver, gold, lead, zinc.
DESCRIPTION: The property overlies syenite, quartz, and quartz feldspar porphyries, granite, and quartz diorite phases of the Nelson batholith which are cut by quartz veins and lamprophyre dykes. Native silver, argentite, galena, sphalerite, bornite, chalcopyrite, and pyrite occur in quartz veins.
WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer and VLF EM surveys, approximately 40 line-miles each; geochemical soil survey, approximately 200 samples covering all claims.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 57; *Geol. Surv., Canada*, Mem. 184, p. 167 (NORTHERN LIGHT), p. 170 (CLUB), p. 184 (REPUBLIC); Assessment Report 4877.

ENTERPRISE **(82F/NW-148)** **(Fig. A, No. 135)** By P. E. Olson

LOCATION: Lat. 49° 49′ Long. 117° 20′ (82F/14W)
SLOCAN M.D. Seven miles northeast of Slocan City, immediately east of Nepawa Creek, at approximately 4,700 feet elevation.
CLAIM: ENTERPRISE (Lot 1014) Crown-granted claim.
OWNER: Enterprise Silver Mines Ltd.
OPERATORS: L. M. FRIED, New Denver (and others).
METALS: Silver, lead, zinc (production shown on Table I).
DESCRIPTION: The Enterprise mine has been the biggest producer of silver-lead-zinc ore in the area and has been worked intermittently since 1894. The Enterprise lode strikes northeasterly and dips steeply to the southwest. Coarse-grained porphyry of the Nelson batholith is the underlying rock in the area, cut in a few places by basic dykes.
WORK DONE: Hand-sorted ore, mainly from No. 5 and No. 6 levels, was shipped to the Trail smelter.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 57.

DALHOUSIE **(82F/NW-146)** **(Fig. A, No. 12)**

LOCATION: Lat. 49° 49′ Long. 117° 21′ (82F/14W)
SLOCAN M.D. Six and one-half miles northeast of Slocan City, south of Enterprise Creek astride Bondholder Creek.
CLAIMS: EO 1 to 10, JJ 1 to 10, PEDRO, DINERO.
OWNER: CASCO INDUSTRIES LTD., 1035 King Georges Way, West Vancouver.
METALS: Zinc, lead.
DESCRIPTION: A quartz-calcite vein with disseminated sphalerite and minor galena occurs in porphyritic granite.
WORK DONE: Linecutting, 13,500 feet.
REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1896, p. 70; *Geol. Surv., Canada*, Mem. 184, p. 172; Assessment Report 4388.

LITTLE TIM (V-DAY) (82F/NW-192) (Fig. A, No. 131)

By P. E. Olson

LOCATION: Lat. 49° 49′ Long. 117° 22′ (82F/14W)
SLOCAN M.D. Five and one-half miles northeast of Slocan, at the head of Bondholder Creek, at approximately 6,400 feet elevation.

CLAIMS: The LITTLE TIM mine is on the V-DAY located claim.

OWNER: Moly-Win Mining Ltd., 827, 510 West Hastings Street, Vancouver.

OPERATOR: WAYNE TURLEY, Kaslo.

METALS: Silver, copper, lead, zinc (production shown on Table I).

DESCRIPTION: High-grade silver ore is found in stringers and bunches in a shear zone in granites of the Nelson batholith. The main showings have been developed by four adits.

WORK DONE: Two tons of ore was hand-sorted from a showing on No. 3 level and shipped to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 449.

BOB, IRON MASK (Fig. A, No. 55)

LOCATION: Lat. 49° 56′ Long. 117° 16′ (82F/14W)
SLOCAN M.D. Four and one-quarter miles east of Silverton, astride and north of Silverton Creek, extending from Wakefield Creek to Fennell Creek, between 3,500 and 6,500 feet elevation.

CLAIMS: Mineral Lease M-348 consisting of IRON MASK (Lot 3520) plus BOB A to M, ALBOB 7 to 51 (of which 13 claims are in contravention with BOB claims).

OWNER: Robert Joy.

OPERATOR: COPPER HORN MINING LTD., Box 11, Nakusp.

METALS: Silver, lead, zinc.

DESCRIPTION: The claims are underlain to the north by sedimentary rocks of the Slocan Group and Nelson granite to the south.

WORK DONE: Geochemical survey, 27 samples covering Iron Mask and Bob B claims; trenching, 1,348 cubic yards and stripping covering Iron Mask, Bob B, and Albob 50 and 51.

HEWITT (82F/NW-65) (Fig. A, No. 133)

By P. E. Olson

LOCATION: Lat. 49° 56′ Long. 117° 18′ (82F/14W)
SLOCAN M.D. Three miles east-southeast of Silverton, 500 feet west of Twigg Creek, a tributary of Silverton Creek, at approximately 3,700 feet elevation.

CLAIMS: HEWITT (Lot 4440) and LORNA DOONE (Lot 1401) Crown-granted claims.

OWNER: Arjan Pacific Ltd.

OPERATOR: MIN CON ASSOCIATES, 320, 475 Howe Street, Vancouver.

METALS: Silver, lead, zinc.

(82F/14W)

DESCRIPTION: Approximately 120,000 tons of ore has been produced from the Hewitt mine to date. The workings lie mainly within sedimentary rocks of the Slocan series, close to the northern contact of the Nelson batholith. The mine has been developed by 13 levels, the lower levels being serviced by a shaft which is now caved and flooded.

WORK DONE: The portal of No. 10 level west was cleared and some rehabilitation work done in this level to accommodate modern mining machinery. It is planned to extend this level for about 1,500 feet in order to explore the western ore section.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 450.

FREDDY (82F/NW-209) (Fig. A, No. 134)

By P. E. Olson

LOCATION: Lat. 49° 56′ Long. 117° 21′ (82F/14W)
SLOCAN M.D. One and one-quarter miles south of Silverton, extending north from Hasty Creek, at approximately 2,900 feet elevation.

CLAIM: FREDDY (Lot 4025) Crown-granted claim.

OWNER: V. HANSEN, New Denver.

METALS: Silver, lead, zinc (production shown on Table I).

DESCRIPTION: The area is underlain by granitic rocks chiefly but, in the vicinity of the Freddy lode, metamorphosed quartzitic and argillaceous sedimentary rocks predominate. The lode is irregular, striking in a northerly direction and dipping easterly.

WORK DONE: Thirty-three tons of hand-sorted ore was mined from surface workings on the Freddy vein system and was shipped to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 326.

SHADOW, NORJACK (Fig. A, No. 28)

LOCATION: Lat. 49° 57′ Long. 117° 20′ (82F/14W)
SLOCAN M.D. About one-half mile southeast of Silverton, extending south from Silverton Creek and east from Slocan Lake.

CLAIMS: NORJACK 1 to 4, SHADOW 1 to 7, 10 to 14, 16, SHADOW 1 to 6 Fractions, WINONA 3 and 4.

OWNER: AMIGO SILVER MINES LTD., 16, 448 Seymour Street, Vancouver 2.

METALS: Lead, zinc, trace silver.

DESCRIPTION: The claim group is underlain in the northeast by the Upper Triassic or early Lower Jurassic Slocan Group, consisting of slate, argillite, quartzite, limestone, conglomerate, and tuff, and in the southwest by Lower Cretaceous Nelson plutonic rocks, composed mainly of porphyritic granite.

WORK DONE: Linecutting and VLF EM survey, 8 line-miles in the southwestern corner of the claim group; linecutting and magnetometer survey, 4 line-miles covering Norjack 1 and 2 and Shadow 4; two bulldozer trenches excavated and five rock samples assayed in the southwestern corner.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 57; Assessment Reports 4537, 4649.

(82F/14W)

SILMONAC (MINNIEHAHA) (82F/NW-50) (Fig. A, No. 138) By P. E. Olson

LOCATION: Lat. 49° 58' Long. 117° 15' (82F/14W)
SLOCAN M.D. Approximately 5 miles east-northeast of Silverton, on the west fork of Tributary Creek, at approximately 4,900 feet elevation.

CLAIMS: MINNIEHAHA (Lot 3171) Crown-granted claim plus 61 claims and several leases.

OWNER: Silmonac Mines Limited.

OPERATORS: KAM-KOTIA MINES LIMITED and BURKAM MINES LTD., New Denver.

METALS: Silver, lead, zinc (production shown on Table I).

DESCRIPTION: The property is underlain by massive, argillaceous to quartzitic sedimentary rocks of the Slocan series. A flat-lying lode system has been developed by several levels, raises, and many stopes. Ore deposition has been found to be irregular but in sufficient quantity to justify mining.

WORK DONE:

Jackleg stoping was done in the upper workings mainly on a salvage basis, while a decline was being driven below the adit level to develop and explore the lode system below the old workings. The decline was driven with jacklegs and a diesel-powered load-haul-dump machine.

Exploration shows that the hangingwall rocks in the lower part of the mine are mainly quartzitic, whereas the hangingwall rocks in the higher workings tended to be more argillaceous. It has also been noted that the character of the ore has changed, there being less massive sulphides than in the upper workings. However, the strength of the hangingwall is greater and hence stoping will be cheaper and safer.

Production, which amounted to 13,949 tons, all came from above the 4625 level. From this ore, 1,172 tons of lead concentrate and 1,133 tons of zinc concentrate were produced at the company mill at Sandon.

Development amounted to 3,047 feet, of which 1,105 feet was related to sinking below the 4625 level.

Ventilation to the mine workings is provided by a 30,000-cubic-foot-per-minute electric fan which exhausts air via raises and levels to the Mascot level.

The tailings impoundment area, which is situated beside Carpenter Creek about 500 feet from the mill, was used continuously during the year, necessitating an addition to the main dykes. There were no spills from the impoundments.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 57, 58.

LEY (LEI) (Fig. A, No. 27)

LOCATION: Lat. 49° 58' Long. 117° 20' (82F/14W)
SLOCAN M.D. Two miles southeast of New Denver, on and west of Bartlett Creek.

CLAIMS: LEY 1 to 30.

(82F/14W)

OWNER: B. Marini.

OPERATORS: P. FITZGIBBON, T. WILKINSON, D. ARSCOTT, and B. MARINI, 4260 Elgin Street, Vancouver.

DESCRIPTION: In this area folded argillite with intercalated limestone belonging to the Slocan Group have been cut by numerous diorite dykes and pyrite-bearing quartz veinlets.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and airphoto interpretation; two hand trenches on Ley 2, 4, 6, 8, 11, and 13.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 328; Assessment Report 4502.

VICTOR (VIOLAMAC) (82F/NW-204) (Fig. A, No. 139)

By P. E. Olson

LOCATION: Lat. 50° 00′ Long. 117° 16′ (82F/14W)
SLOCAN M.D. Four and one-half miles east of New Denver, one-half mile west of Carpenter Creek, at approximately 4,000 feet elevation.

CLAIM: VICTOR (Lot 4564) Crown-granted claim.

OWNER: Kam Kotia Mines Limited.

OPERATOR: E. PETERSEN, Sandon.

METALS: Silver, lead, zinc (production shown on Table I).

DESCRIPTION: The rocks embracing the Victor mine are chiefly massive argillaceous and quartzitic sedimentary rocks striking northwesterly and dipping southwesterly. The lode system, carrying massive galena, cuts the formations at about right angles.

WORK DONE: A minor amount of exploration and development was done which disclosed a showing of shipping ore. Thirty tons of this ore was shipped to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 59.

MOUNTAIN CHIEF (82F/NW-177) (Fig. A, No. 151)

LOCATION: Lat. 50° 00′ Long. 117° 20′ (82F/14W)
SLOCAN M.D. One and three-quarter miles due east of the village of New Denver, along the southeast side of Carpenter Creek extending east to St. Clair Creek, at approximately 2,400 feet elevation.

CLAIMS: MOUNTAIN CHIEF (Lot 474) and MAMMOTH (Lot 1910) Crown-granted claims plus PET 1 to 4, 9 to 14, RT 1 to 4.

OPERATOR: NEW DENVER EXPLORATIONS LTD., 726, 470 Granville Street, Vancouver.

METALS: Zinc, silver, lead, copper.

DESCRIPTION: Slate, argillite, tuff, limestone, and conglomerate of the Slocan Group have been cut by dykes and stocks of granitic rocks. The Nelson batholith outcrops 2 miles to the south. The strata are highly folded and fractured and the predominant attitude is a northwest strike and southwest dip. Sulphide minerals replace a 2-foot limestone bed which is intersected by the Apex and Mountain Chief quartz veins carrying heavy concentrations of sphalerite, galena with some pyrite, and chalcopyrite.

(82F/14E)

WORK DONE: Surface diamond drilling, three holes and stripping on Mountain Chief and Mammoth.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 58, 59.

SILVER RANCH (82F/NW-215) (Fig. A, No. 54)

LOCATION: Lat. 49° 47' Long. 117° 14' (82F/14E)
SLOCAN M.D. Ten and three-quarter miles east-northeast of Slocan City, extending southwest from Enterprise Creek, on the east side of Boomerang Mountain.

CLAIMS: SILVER RANCH 1 to 12.

OWNER: W. J. GRANT, 808 West Gore Street, Nelson.

METALS: Gold, silver, lead, zinc.

DESCRIPTION: The claim area is underlain by very coarse-grained granite of the Nelson batholith. A shear zone 15 to 30 feet wide and at least 1,500 feet long striking 005 degrees and dipping 50 degrees east contains several quartz veins and veinlets, some of which carry galena, sphalerite, and pyrite. A vein along the hangingwall 6 inches to 15 inches wide has been followed by two adits.

WORK DONE: Surface geological mapping, 1 inch equals 300 feet and underground geological mapping, 1 inch equals 40 feet covering Silver Ranch 1-6.

REFERENCE: Assessment Report 4632.

COMSTOCK (82F/NW-77) (Fig. A, No. 52) By P. E. Olson

LOCATION: Lat. 49° 54' Long. 117° 14' (82F/14E)
SLOCAN M.D. Seven miles southeast of Silverton, one-half mile east of Fennell Creek, extending east to Silverton Creek, at approximately 5,500 feet elevation.

CLAIMS: COMSTOCK (Lot 1814) and SILVER CHIEF (Lot 1813) Crown-granted claims; Mineral Leases M-278 comprising SILVER CUP (Lot 1815) and ISABEL FR. (Lot 1817) and M-319 comprising RUBY TRUST (Lot 1804) and KENTUCKY GIRL (Lot 1818) plus RUTH, SUSAN, MURPH Fraction, MURPH 1 Fraction, ISABELLE 1, 2, 7, 8, 16 to 19, SKI-DOO 1 and 2, TD 1, 2, 4, 5 located claims.

OWNERS: H. S. Murphy, R. H. Murphy, Mrs. V. Harding, and Paladora Mines Ltd.

OPERATORS: ALBERT EMBLETON and S. G. CRAIK, 1545 Harvey Avenue, Kelowna.

METALS: Silver, lead, zinc.

DESCRIPTION: The property lies within the northern extension of a body of medium to fine-grained granite and granodiorite of the Nelson batholith. A brecciated and mineralized zone striking northeasterly and dipping to the southeast has been explored by nine adits amounting to around 2,800 feet of workings. A small amount of ore has been shipped from these adits.

(82F/14E)

WORK DONE: Logging roads on Fennell Creek were extended to the Comstock workings and several cuts were made with a small bulldozer. Some ore was uncovered and taken to a cabin in the Fennell Creek basin.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 450; 1972, p. 60; *Geol. Surv., Canada,* Mem. 184, p. 33.

RECO, BLUEBIRD, NOBLE FIVE (82F/NW-19, 20, 31 to 37, 200)

(Fig. A, No. 53)

LOCATION: Lat. 49° 59′ Long. 117° 11′ (82F/14E)
SLOCAN M.D. Seven and three-quarter miles east-northeast of Silverton, extending south from Mount Reco and Mount Payne to Carpenter Creek at Cody, between 4,000 and 7,000 feet elevation.

CLAIMS: Sixty-eight Crown-granted and located claims including RUECAU (Lot 624), BLUEBIRD (Lot 540), NOBLE FIVE (Lot 467), NUMBER ONE (Lot 4560), GREY COPPER (Lot 580), TEXAS (Lot 589), CHAMBERS (Lot 1752).

OWNERS: Reco Silver Mines Limited and Vespar Mines Limited.

OPERATOR: RAYROCK MINES LIMITED, 1011, 2200 Yonge Street, Toronto, Ont.

METALS: Silver, lead, zinc.

DESCRIPTION: Sedimentary rocks belonging to the Slocan Group are intruded by numerous quartz feldspar porphyry dykes. Galena-sphalerite-pyrite mineral shoots occur in structurally controlled traps along lodes or shear zones.

WORK DONE: Geochemical soil survey, 2,400 samples covering 70 per cent of the claims; surface diamond drilling, 10 holes totalling 2,331 feet on Texas, Number One, Grey Copper, and Chambers; underground work, 964 feet on Number One and Chambers; part of road system surveyed.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 453 (SLOCAN SOVEREIGN); 1971, p. 408; *Geol. Surv., Canada,* Mem. 184, p. 107.

NOR (82F/NE-128) (Fig. A, No. 140)

By P. E. Olson

LOCATION: Lat. 49° 46′ Long. 116° 57′ (82F/15W)
SLOCAN M.D. Approximately 3 miles northwest of Ainsworth, south of Lendrum Creek, at approximately 4,100 feet elevation.

CLAIMS: NOR II (key claim) and NOR 1, 3 to 5.

OWNER: W. E. Lane.

OPERATOR: H. McGOWAN, Ainsworth.

METALS: Silver, lead, zinc (production shown on Table I).

DESCRIPTION: A somewhat irregular zone, striking westerly and dipping steeply to the north, has been developed by an open cut. Widths vary to a maximum of around 5 feet.

WORK DONE: The mineral exposures made in 1972 were further explored by deepening and lengthening the open cut started earlier. Seventy tons of ore was selected from the excavation and shipped to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, pp. 61, 62.

HILO (82F/NE-202 to 204) (Fig. A, No. 57)

LOCATION: Lat. 49° 48' Long. 116° 20' (82F/16W)
FORT STEELE M.D. Twenty-three and one-half miles east-northeast of Riondel, 6 miles north-northeast of the confluence of Dewar and White Creeks, extending down the north side of Mount Patrick to Diorite Lake, between 6,000 and 8,600 feet elevation.

CLAIMS: HILO 1 to 12.

OWNER: Texasgulf, Inc.

OPERATOR: ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: The claims are underlain by clastic sedimentary rocks of the lower and middle divisions of the Aldridge Formation which have been intruded by dioritic Moyie sills. Galena and sphalerite occur in vein and replacement deposits in both the sedimentary and intrusive rocks.

WORK DONE: Vertical-loop EM survey, 1.2 line-miles; magnetometer survey, 1.2 line-miles; and geochemical soil survey, 62 samples taken at 100-foot intervals on five widely separated lines covering Hilo 3, 4, 6, and 11.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 414; Asessment Report 4713.

NINE LAKE (82F/NE-132) (Fig. A, No. 106)

By R. W. Lewis

LOCATION: Lat. 49° 59' Long. 116° 13' (82F/16E)
FORT STEELE M.D. Twenty-two and one-half miles north-northeast of Kimberley, on Greenland Creek, a tributary of Skookumchuck Creek, between 6,100 and 7,700 feet elevation.

CLAIMS: NINE LAKE 1 to 4, 6, 8, 10 to 12, 25, 26, 28, 30, 32, 34 to 38, 41 to 46, 49 to 51, 61 to 68, 70, 74, 76, 78.

OWNER: KERR ADDISON MINES LIMITED, 406, 1112 West Pender Street, Vancouver V6E 2S1.

METALS: Lead, zinc, copper, tungsten.

DESCRIPTION: In the area light grey to light brown, thin to thick-bedded, micaceous quartzites and siltstone were intruded by a series of diorite sills. Mineralization has been localized as fracture fillings, as quartz veins, and in shears within diorite sills and quartzite.

WORK DONE: 1972 – surface geological mapping, 1 inch equals 400 feet covering all claims; magnetometer survey, 1 line-mile covering MC claims; magnetometer and EM surveys, 35 line-miles covering Nine Lake claims; geochemical soil survey, 600 samples on Nine Lake claims and 35 samples on MC claims; 1973 – road construction, 3.75 miles on Nine Lake 63, 65, 68, and 70; trenching, 500 feet on Nine Lake 61 and 68.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1968, p. 267 (PICO); Assessment Report 3927.

BETH (82G/SE-44) (Fig. A, No. 59)

LOCATION: Lat. 49° 09′ Long. 114° 17′ (82G/1W)
FORT STEELE M.D. Nine miles east of Flathead River, extending east from Roche Creek, about one-half mile north of the junction of Roche and Sage Creeks.

CLAIMS: BETH 1 to 8.

OWNERS: R. J. Goble, D. F. Goble, E. O. Goble, E. M. Goble, and L. E. Goble.

OPERATOR: KINTLA EXPLORATIONS LIMITED, 7, 8540 – 109th Street, Edmonton, Alta.

METAL: Copper.

DESCRIPTION: In the claim area, green Kintla shales contain a lens of chalcopyrite-bearing red sandstone 6 inches to 2 feet thick.

WORK DONE: 1972 – reconnaissance surface geological mapping; 18 rock samples taken covering Beth 2, 4, and 6.

REFERENCE: Assessment Report 4535.

ABC (Fig. A, No. 60)

LOCATION: Lat. 49° 09′ Long. 114° 22′ (82G/1W)
FORT STEELE M.D. Five and one-half miles east of the Flathead River, astride Sunkist Brook, about one-half mile north of its junction with Sage Creek, between 4,500 and 5,000 feet elevation.

CLAIMS: ABC 3, 4, 13 to 18.

OWNER: MARK V MINES LTD., 301, 540 Burrard Street, Vancouver.

DESCRIPTION: The claims are underlain by interbedded red argillite and white to green quartz sandstone of the Grinnell Formation.

WORK DONE: Trenching, 74 cubic yards on ABC 16.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 63.

COMMERCE (82G/SE-6, 39, 41, 42, 43) (Fig. A, No. 58)

LOCATION: Lat. 49° 11′ Long. 114° 23′ (82G/1W)
FORT STEELE M.D. Approximately 4 miles east of Flathead River, north and northeast of Commerce Peak, between Commerce Creek and Sunkist Ridge.

CLAIMS: COMMERCE 1 to 16, 19 to 38, 41 to 48, CHAIN LINK 39.

OWNERS: R. J. Goble, D. F. Goble, E. O. Goble, E. M. Goble, and L. E. Goble.

OPERATOR: KINTLA EXPLORATIONS LIMITED, 7, 8540 – 109th Street, Edmonton, Alta.

METALS: Copper, gold.

DESCRIPTION: The Commerce claims are underlain by Purcell rocks ranging from Appekunny to lower Kintla. The formations have an overall gentle east dip, but the Appekunny and Grinnell are gently folded on east and north axes. The Grinnell argillite contains thin sandstone beds which locally contain sparse bornite, chalcocite, and chalcopyrite as blebs and replacements or clasts of green shale; there is some concentration along fold axes. The middle Siyeh dolomite and upper Siyeh shale have been intruded by diorite sills and dykes, and in the shales both the diorite and adjacent shale contain pyrite, pyrrhotite, and subordinate chalcopyrite. The Purcell lava contains pyrite, pyrrhotite, and subordinate chalcopyrite at flow contacts, joint planes, and in vesicles. On 'Sill' Mountain a trench exposed sulphides extensively disseminated in the base of a thick sill and in underlying lower Sheppard argillites.

WORK DONE: Surface geological mapping, 1 inch equals 417 feet and 1 inch equals 200 feet; 124 rock samples taken covering Commerce 1-16, 19-38, and 41-48.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, p. 272; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 477; Assessment Report 4535.

MAX (Fig. A, No. 61)

LOCATION: Lat. 49° 29' Long. 115° 20' (82G/6W)
FORT STEELE M.D. Eleven miles west of Fernie, adjacent to Murray Lake and astride Supply Creek, immediately southeast of the Bull River Hydro Dam, between 3,000 and 3,500 feet elevation.

CLAIMS: MAX 9 to 42, 46 to 51.

OWNER: PLACID OIL COMPANY, 860 Guinness House, Calgary, Alta.

DESCRIPTION: In the area of the claims, scattered quartz veins are present in argillite and quartzite of the Aldridge Formation.

WORK DONE: Magnetometer survey, 12.06 line-miles covering Max 9-16, 19, 21, 25, 27-39, 47, 49.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 64.

BULL RIVER MINE (82G/NW-2) (Fig. A, No. 109)

By R. W. Lewis

LOCATION: Lat. 49° 30' Long. 115° 23' (82G/11W)
FORT STEELE M.D. Fourteen and one-half miles due west of Fernie, extending north from the Bull River, astride Burntbridge Creek, at approximately 3,500 feet elevation.

CLAIMS: Mineral Lease M-69 comprising Lots 14717 to 14752, which includes BIG BONANZA 1 to 4, BONANZA 5 to 14, 17 to 19, LIZ 1 to 3, 8, 9, 11, 13, 14, FEB 1 to 4, JUNE 1, 8 to 13 plus JUNE 2 to 6, LIZ 4 to 7, 10 to 12, BONANZA 15, 16, 20 to 33, 38, and 40 located claims.

OWNER: PLACID OIL COMPANY, 860 Guinness House, 727 Seventh Avenue SW., Calgary, Alta.; mine address, Box 850 Cranbrook; Leo Piwek, general superintendent.

METALS: Copper, silver, gold (production shown on Table I).

DESCRIPTION: This deposit at the Bull River mine comprises chalcopyrite as fracture fillings and massive replacements in quartz siderite gangue that occurs in vein networks.

WORK DONE:

Mining was done using open-pit methods. Caterpiller dozers were used to strip overburden with a minimum amount of drilling and blasting, which was hauled from the pit area by 35-ton trucks and spoiled at a terraced dump location. The uncovered ore was drilled and blasted and hauled to a small stockpile adjacent to the crusher building.

Milling of the ore was accomplished using simple crushing grinding and flotation circuits with a capacity of 750 tons per day.

EXPLORATION: Twenty-eight holes totalling 4,212 feet were drilled. Twenty-five of the holes were located in open-pit areas to confirm original grade estimates. The remaining holes were located to the north and east of the pits and were drilled to investigate geological and geophysical anomalies.

The drilling was done using a BBS-1 wireline machine recovering BQ core. An average of two men per shift, one shift per day, drilled from mid-January until the beginning of June.

Approximately 6,000 line-feet of experimental VHF EM survey was performed to the north of the open pits. The survey utilized a number of different core configurations and spacings. Anomalies were tested by diamond drilling.

MILLING OPERATIONS: A total of 206,812 tons of ore was processed and yielded 14,423 tons of concentrate.

Manpower in the mill remained at 10 operators, 1 mechanic, and 1 electrician.

MINING OPERATIONS: Production work for 1973 came from No. 2 pit to April and then from No. 1 pit: total ore production, 243,547 tons; total overburden, 905,619 billion cubic yards; total rock, 85,443 tons.

The pit operated 16 hours per day, five days per week, with 17 operators, 4 mechanics, and 2 shiftbosses.

After completion of No. 2 pit, the pit was backfilled with material from No. 1 pit and almost completely refilled.

Contouring of the west dump was almost complete and spring seeding will complete this area.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 65, 66.

POLARIS (82F/NE-54, 101) (Fig. A, No. 48)

LOCATION: Lat. 49° 37′ Long. 115° 59′ (82G/12W; 82F/9E) FORT STEELE M.D. Approximately 13 miles northwest of Cranbrook, lying astride St. Mary River and extending north to Dipper Lake and Marysville and south astride Pitt Creek, between 3,000 and 5,000 feet elevation.

CLAIMS: POLARIS 17 to 24, 31 to 38, 45 to 54, 59 to 70, 72 to 149, RIGEL 1 to 46, MOLOCH 1 to 6, THREEFINGERS 1 to 18.

OWNER: Texasgulf, Inc.

OPERATOR: ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.

(82G/12W)

METALS: Lead, zinc, copper.

DESCRIPTION: The claims are underlain by a sequence of clastic sedimentary rocks of the Aldridge Formation, cut by dioritic Moyie sills. The structural pattern is complex with an overall strike of the beds of approximately 170 degrees with dips varying from 25 to 85 degrees to the southwest. Effects of low-grade regional metamorphism are evident.

WORK DONE: Magnetometer survey, approximately 3 line-miles; radem survey, approximately 3 line-miles; vertical-loop EM survey, approximately 0.8 line-mile; and geochemical soil survey, 206 samples taken at a 100 by 400-foot grid spacing covering Polaris 89 to 94, 121, 123.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 53; Assessment Report 4711.

HUNT (Fig. A, No. 62)

LOCATION: Lat. 49° 42' Long. 115° 48' (82G/12W)
FORT STEELE M.D. Eight and one-quarter miles east of Kimberley, straddling Wait Creek, one-quarter mile north of its junction with Mather Creek, at approximately 2,000 feet elevation.

CLAIMS: HUNT 1 to 6, 8, 10, 25 to 34.

OWNER: C. Warren Hunt.

OPERATOR: C. WARREN HUNT EXPLORATION LTD., 1119 Sydenham Road SW., Calgary, Alta.

DESCRIPTION: The claims are underlain by argillites, siltstones, and quartzites of the Creston and Aldridge Formations.

WORK DONE: Rotary drilling, two holes totalling 370 feet on Hunt 27.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 67.

SULLIVAN MINE (82F/NE-52) (Fig. A, No. 129)

LOCATION: Lat. 49° 42' Long. 116° 01' (82F/9E; 82G/12W)
Report on this property in section 82F/9E.

LARDEAU 82K

ACE (82K/SE-63) (Fig. A, No. 64)

LOCATION: Lat. 50° 01' Long. 116° 13' (82K/1E)
GOLDEN M.D. Thirty-three miles south-southwest of Invermere, surrounding the headwaters of Doctor Creek, between 6,000 and 9,000 feet elevation.

CLAIMS: ACE 1 to 28, 35, ACE 36 Fraction.

OWNER: Texasgulf, Inc.

OPERATOR: ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.

METALS: Minor copper, lead, zinc.

(82K/1E)

DESCRIPTION: Gently dipping clastic sedimentary rocks of the Aldridge Formation have been cut by dioritic Moyie sills. Mineralization is minor and consists of pyrite, pyrrhotite, chalcopyrite, magnetite, goethite, and sphalerite disseminated in the sedimentary units and in veins which cut both rock types.

WORK DONE: Geochemical soil survey, 206 samples taken at 200 by 500-foot grid spacing covering Ace 2, 4, 6, 8, 10, 12, 13, 15, 17, 19, 21, 23.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 420; Assessment Report 4705.

DOC (82K/SE-60) (Fig. A, No. 63)

LOCATION: Lat. 50° 06' Long. 116° 10' (82K/1E)
GOLDEN M.D. Twenty-seven miles south-southwest of Invermere, 6.25 miles south 80 degrees west of the mouth of Doctor Creek, at approximately 8,000 feet elevation.

CLAIMS: DOC 1 to 9.

OWNER: KERR ADDISON MINES LIMITED, 405, 1112 West Pender Street, Vancouver V6E 2S1.

METAL: Lead.

DESCRIPTION: Dark grey to black argillite overlies light brown to green, massive, fine-grained quartzites within the top horizon of the upper part of the Aldridge Formation, which strikes northwesterly and dips northerly. Medium to coarse-grained galena is associated with quartz within the argillaceous rocks.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Doc 1-3 and 7; IP and VLF EM survey, 1 line-mile covering Doc 2 and 7; geochemical survey, 60 soil samples covering Doc 2, 3, and 7 and 15 rock samples covering Doc 1-3 and 7; topography mapped.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 68; Assessment Report 4658.

DUBLIN QUEEN (82K/SW-15) (Fig. A, No. 146)

By P. E. Olson

LOCATION: Lat. 50° 00' Long. 117° 10' (82K/3E)
SLOCAN M.D. Nine miles east of New Denver, at the head of Stenson Creek.

CLAIMS: DUBLIN QUEEN (Lot 1167) plus nine adjoining Crown-granted claims.

OWNER: Iskut Silver Mines Limited.

OPERATOR: FOSTALL MINES LTD., c/o Dick Fowler, Box 40, Robson.

METALS: Silver, lead, zinc (production shown on Table I).

DESCRIPTION: Rich stringers of silver, lead, and zinc ore occur in lode strands cutting through argillite members.

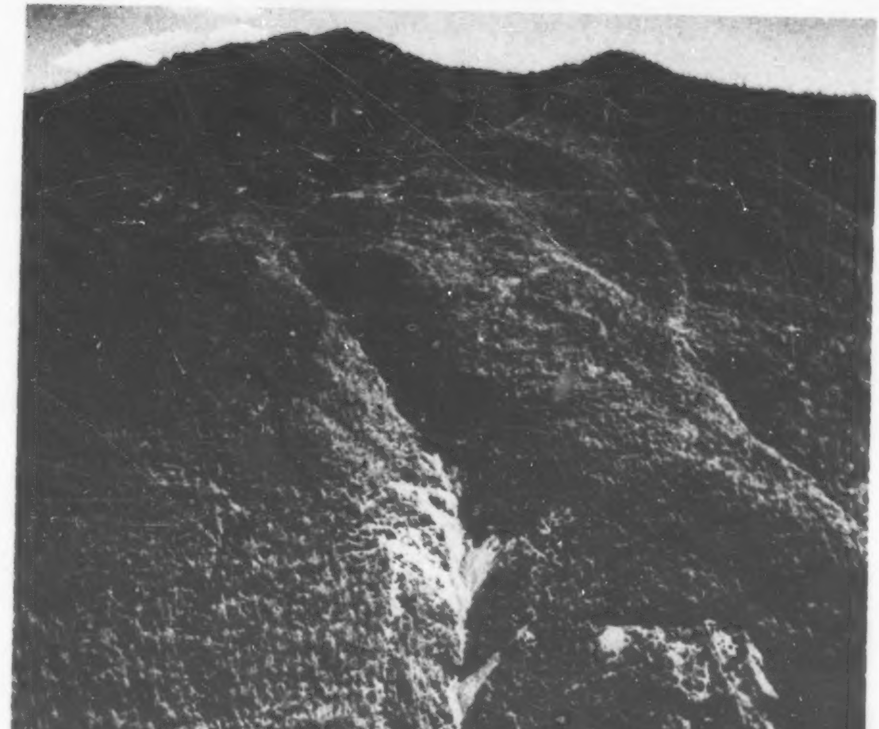


Plate I. View looking toward Reco Peak of old Lucky Jim mine layout, dumps, and mill building (in 1945).

(82K/3E)

WORK DONE: This property has been worked intermittently since the turn of the century and was the site of operations for Jackson Basin Mines Ltd. approximately 20 years ago. During 1973 the upper level was cleared out and the vein exposed. Eight tons of rich ore was hand sorted from the vein and shipped to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 421.

WASHINGTON (82K/SW-8) (Fig. A, No. 144)

By P. E. Olson

LOCATION: Lat. 50° 00' Long. 117° 13' (82K/3E)
SLOCAN M.D. Six and one-half miles east of New Denver.
CLAIM: WASHINGTON (Lot 541) Crown-granted claim.
OWNER: Larch Mining Ltd.
OPERATOR: J.O.H. NESBITT, Silverton (formerly W. McLeod).
METALS: Silver, lead, zinc (production shown on Table I).

DESCRIPTION: Sedimentary rocks of the Slocan series strike northwesterly and dip to the southwest. The Washington lode strikes nearly at right angles to the formation, and dips steeply to the southeast.

WORK DONE: Seventeen tons of selected and hand-sorted ore was shipped to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 69.

BEST (82K/SW-18) (Fig. A, No. 147)

By P. E. Olson

LOCATION: Lat. 50° 01' Long. 117° 11.5' (82K/3E)
SLOCAN M.D. Eight miles east-northeast of New Denver, between Rambler and Dardanelles Creeks.
CLAIM: BEST (Lot 451) Crown-granted claim.
OWNER: THOMAS ECCLES, Box 638, Trail.
METALS: Silver, lead, zinc (production shown on Table I).

DESCRIPTION: Mineralization occurs in narrow fault fissures which conform with joints in a stock-like mass of quartz diorite. Sedimentary rocks of the Slocan series adjoin the igneous rocks in the vicinity of the workings. The strike of the mineralized zone varies considerably but trends generally to the southeast and dips gently to the northeast.

WORK DONE: The lode has been developed by several adits and a shaft from which considerable ore has been shipped. During 1973, 10 tons of sorted ore was shipped to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 422.

LUCKY JIM (82K/SW-23) (Fig. A, No. 143)

By P. E. Olson

LOCATION: Lat. 50° 02' Long. 117° 12' (82K/3E)
SLOCAN M.D. Approximately 8 miles east-northeast of New Denver and one-half mile south of Bear Lake.
CLAIMS: LUCKY JIM (Lot 844) and adjoining Crown-granted claims.

(82K/3W)

OWNER: J.A.C. Ross & Associates.
OPERATOR: W. McCRORY, New Denver.
METALS: Lead, zinc.
WORK DONE: The Lucky Jim mine and mill have been closed since 1953 except for surface exploration carried out in 1971. During 1973 the old bins in the mill were swept out and some concentrate was salvaged. Approximately 1 ton of lead concentrate and approximately 1.5 tons of zinc concentrate were salvaged.
REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1953, p. 138; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 422.

MOLLY HUGHES (82K/SW-2) (Fig. A, No. 13)

LOCATION: Lat. 50° 01′ Long. 117° 22′ (82K/3W)
SLOCAN M.D. One mile north of New Denver, extending from the mouth of Tryon Creek on Slocan Lake, at approximately 4,000 feet elevation.
CLAIMS: KINKORA, REAL IDEA 2, MOLLY HUGHES, PINTO, TRYON (Lots 2104 to 2108), plus PPH 1 and 2, PHP 1 to 4.
OWNER: DYKE MINES LIMITED, 320, 475 Howe Street, Vancouver.
METALS: Silver, gold, lead, zinc.
DESCRIPTION: The property lies within porphyritic granite and granodiorite of the Nelson batholith. Argentiferous tetrahedrite, pyrite, and some galena and sphalerite occur disseminated in quartz filling along at least five fault-fissure lodes which vary from 1 to 8 feet in width and strike approximately north 75 degrees west. The lodes are cut by numerous north-south faults.
WORK DONE: Completion of 1972 reconnaissance surface and underground geological mapping covering all claims and Kinkora adit; 16 grab samples taken on Real Idea 2, Kinkora, and Pinto.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 71; Assessment Report 4390.

MILLIE MACK (82K/SW-51) (Fig. A, No. 148)

LOCATION: Lat. 50° 03′ Long. 117° 44′ (82K/4E)
SLOCAN M.D. Eight miles northeast of Burton, on the west side of Independence Creek, 1 mile north of Caribou Creek, at approximately 6,000 feet elevation.
CLAIMS: MILLIE MACK (Lot 1831), BLACK BEAR FR. 1 (Lot 4850), TRIUMPH (Lot 4194), IMPREGNABLE (Lot 4195), RAINBOW QUARTZ (Lot 4193), WOLF (Lot 1830), GOLD RING (Lot 1828), HEF FR. (Lot 4849), GREAT WESTERN (Lot 2200), plus approximately 30 located claims including RMW and RSM.
OWNER: RICHWOOD INDUSTRIES LTD., 601, 850 West Hastings Street, Vancouver.
METALS: Silver, lead, zinc, gold.

(82K/4W)

DESCRIPTION: Exploration was confined to quartz veins within argillites belonging to the Slocan series. Sulphide mineralization includes galena, tetrahedrite, pyrite, arsenopyrite, and sphalerite.

WORK DONE: Re-opened road from Blue Grouse Creek to Millie Mack property; trenching on RMW 36.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 72.

SHAKESPEARE, SKYLARK (82K/SW-67) (Fig. A, No. 65)

LOCATION: Lat. 50° 05' Long. 117° 48' (82K/4W)
SLOCAN M.D. Ten and one-half miles south of Nakusp, surrounding the headwaters of Mineral Creek, at approximately 6,400 feet elevation.

CLAIMS: Mineral Leases M-197 comprising SKYLARK (Lot 5719) and SHAKESPEARE (Lot 5720) and M-290 comprising MOUNTAIN MEADOW (Lot 3604), MEADOW QUEEN (Lot 3605), and MEADOW (Lot 5862).

OPERATOR: TAPIN COPPER MINES LIMITED, 307, 475 Howe Street, Vancouver.

METALS: Silver, lead, zinc, copper.

DESCRIPTION: The area is underlain by the lower part of the Slocan Group which has been intruded by igneous rocks of the Nelson batholith. A fractured quartz vein bearing galena, sphalerite, and argentite with minor chalcopyrite, pyrite, and pyrrhotite cuts biotite granite.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; VLF EM survey, 5 line-miles; geochemical survey, 161 samples covering 5 line-miles.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 424.

RAD (82K/SE-27) (Fig. A, No. 66)

LOCATION: Lat. 50° 24' Long. 116° 25' (82K/8W)
GOLDEN M.D. Seventeen miles west-southwest of Invermere, extending south from Delphine Creek, at approximately 6,000 feet elevation.

CLAIMS: RAD 1, 3 to 5, 16, 17, 28, 40, 41.

OWNER: J. S. Adamson.

OPERATOR: MEDESTO EXPLORATION LTD., 4, 215A – 10th Street NW., Calgary, Alta.

METALS: Silver, lead.

DESCRIPTION: The claims are underlain by the broadly folded and metamorphosed Mount Nelson Formation, a sequence of Precambrian sedimentary rocks of the Purcell Supergroup. This formation consists of buff-weathering grey dolomitic limestones, purple, grey, and black argillites, and slates with white and green quartzites.

WORK DONE: Surface geological mapping, 1 inch equals 300 feet covering Rad 16, 17, and 28; trenching, 199 feet by 5 feet by 5 feet on Rad 16, 17, and 28.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 73.

ANNETTE, SLIDE (82K/NE-16, 40 to 44, 46, 47, 50 to 52, 54)

(Fig. A, No. 67)

LOCATION: Lat. 50° 38′ Long. 116° 30′ (82K/9W, 10E)
GOLDEN and SLOCAN M.D. Approximately 22 miles west of Radium, near the headwaters of Welsh and Forster Creeks. The ZEN claims are about 5 miles west, surrounding Whirlpool Lake. The claims range between 5,500 and 7,500 feet in elevation.

CLAIMS: ANNETTE 1, 2, 27 to 33, SLIDE 1 to 6, 23 to 32, 39 to 49, ZEN 1 to 8, BEV 1 to 12, DOLLY 1 to 4, GRANITE 1 to 7, BLUE 2, 4, 6, 8, 26, 27, ICE 2, 4, 6, 20, 22.

OWNER: CANADIAN JOHNS-MANVILLE COMPANY LIMITED, 9, 219 Victoria Street, Kamloops.

METALS: Molybdenum, copper.

DESCRIPTION: Quartz monzonite and granodiorite of the Horsethief stock has intruded quartzite, limestone, argillite, and sandstone of the Horsethief Creek Group, Mount Toby Formation (conglomerate), Dutch Creek Formation, and Mount Nelson Formation. Molybdenite and chalcopyrite are present in quartz veins and fractures in both quartz monzonite and hornfels along the contact. An extensive gossan zone has developed on hornfels on the Ice and Granite claims.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet, 1 inch equals 100 feet, and 1 inch equals 400 feet covering Zen 1-8, Slide 39-44, Annette 28-32, Blue 2, 4, 6, 8, Dolly 1-4, Granite 1-7, Ice 2, 4, 6, and Bev 1, 3, 5; geochemical soil, rock chip, and talus fines survey, approximately 500 samples covering same claims; surface diamond drilling, one hole totalling 53 feet on Zen 3.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 74; Assessment Reports 4485, 4559, 4613, 4614.

TAMARAK (82K/NE-57) (Fig. A, No. 69)

LOCATION: Lat. 50° 32′ Long. 116° 32′ (82K/10E)
GOLDEN M.D. Twenty-two miles west of Invermere, at the junction of Paulding and Horsethief Creeks, at approximately 4,500 feet elevation.

CLAIMS: TAMARAK 1 to 23, J RANK 1 and 2.

OWNERS: J. H. CONROY and A. LOUIE, Box 325, Invermere.

METALS: Lead, zinc, (gold).

DESCRIPTION: Lead and zinc mineralization occurs as lithologic replacements in calcareous schist, argillite, and dolomite of the Mount Nelson Formation.

WORK DONE: Stripping, five pits on J Rank 2 and Tamarak 1, 2, and 18.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 74.

BEE (82K/NE-55) (Fig. A, No. 68)

LOCATION: Lat. 50° 40' Long. 116° 36' (82K/10E)
GOLDEN and SLOCAN M.D. Twenty-three and one-half miles west of Radium Hot Springs, extending down the eastern and southeastern slopes of Taurus Mountain, at approximately 7,800 feet elevation.
CLAIMS: BEE 1 to 12.
OWNER: Union Carbide Exploration Corporation.
OPERATOR: UNION CARBIDE CANADA MINING LTD., 601, 1112 West Pender Street, Vancouver.
METALS: Tungsten, molybdenum.
DESCRIPTION: Altered limestone units of the Horsethief Creek series, intruded by granitic stocks, carry scheelite in a pale diopside skarn.
WORK DONE: Surface geological mapping, 1 inch equals 200 feet and 1 inch equals 50 feet; surface diamond drilling, seven holes totalling 714 feet on Bee 10.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 75.

SILVER BASIN (82K/NE-20) (Fig. A, No. 73)

LOCATION: Lat. 50° 41' Long. 116° 44' (82K/10E)
GOLDEN and SLOCAN M.D. Thirty-three miles northwest of Invermere, in Bugaboo Pass, at the head of Bugaboo Creek, at approximately 7,200 feet elevation.
CLAIMS: NO. 21 (Lot 1977) and WESTERN CROSS (Lot 1978) Crown-granted claims plus SILVER TIP 1 to 6, 24 to 29, SILVER 15 and 16 located claims.
OWNERS: Purcell Development Co. Ltd. and Y. Mercier.
OPERATOR: PURCELL DEVELOPMENT CO. LTD., Box 1, Fairmont Hot Springs.
METALS: Silver, lead, zinc, copper.
DESCRIPTION: Carbonate rock and calcareous argillite of the Upper Horsethief Creek Formation crop out on the property. Sphalerite and galena occur as replacements of the carbonate rock, and pyrite and chalcopyrite occur as disseminations and associated with quartz stringers.
WORK DONE: Surface diamond drilling, eight holes totalling 2,200 feet on No. 21 and Western Cross Crown-granted claims.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 75.

McLEAN (82K/NE-49) (Fig. A, No. 74)

LOCATION: Lat. 50° 42' Long. 116° 34' (82K/10E)
GOLDEN M.D. Twenty-six miles northwest of Invermere, extending south along McLean Creek from Frances Creek, between 6,000 and 7,200 feet elevation.
CLAIMS: EVELYN 2 to 18.
OWNER: PURCELL DEVELOPMENT CO. LTD., Box 1, Fairmont Hot Springs.
METALS: Silver, lead, antimony, zinc.

(82K/10E)

DESCRIPTION: Dolomitic limestone of the Mount Nelson Formation is bounded by the Toby Formation (conglomerate) to the west and the Dutch Creek Formation (argillite) to the east. Quartz-carbonate veins contain argentiferous galena, possible jamesonite, and minor sphalerite.

WORK DONE: Surface diamond drilling, six holes totalling 1,500 feet on Evelyn 2 and 3.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 427.

LEAD QUEEN (82K/NE-26) (Fig. A, No. 70)

LOCATION: Lat. 50° 43' Long. 116° 33' (82K/10E)
GOLDEN M.D. Twenty-seven miles northwest of Invermere, extending north from the junction of Frances and McLean Creeks.

CLAIMS: Mineral Lease M-40 comprising STEELE (Lot 12499) and STEELE 2 (Lot 12500), seven Crown-granted claims comprising COLUMBIA CHIEF FR., LUCKY CHIEF, LUCKY STRIKE (Lots 11423 to 11425), LEAD QUEEN, COLUMBIA (Lots 12763 and 12764), and BIG CHIEF (Lot 12766), plus CREEK 1 and 2, CHAN 1 to 16, FM 1 to 14, KLICK 1 and 2, SB 1 to 3 Fractions, WS 1 to 16 located claims.

OWNER: FRANCES CREEK MINES LTD., 409, 603 Seventh Avenue SW., Calgary, Alta.

METALS: Silver, lead, zinc.

DESCRIPTION: Several quartz-carbonate veins, carrying galena and minor sphalerite, form a linear zone (a possible fault) in quartzite of the Mount Nelson Formation.

WORK DONE: Chain and compass survey of workings and roads covering Creek 1, 2, Chan 1-8, FM 7-9, Klick 2, Mineral Lease M-40, and all Crown-granted claims; surface diamond drilling, one hole totalling 195 feet on Lead Queen and three holes totalling 414 feet on First Effort.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 75; Assessment Reports 4538, 4712, 4747.

BUTT (82K/NW-95) (Fig. A, No. 72)

LOCATION: Lat. 50° 33' Long. 117° 16' (82K/11W)
REVELSTOKE and SLOCAN M.D. Seventeen miles southeast of Beaton, east of Trout Lake, at the headwaters of Horsefly, American, and Haskins Creeks, between 6,000 and 7,300 feet elevation.

CLAIMS: Mineral Lease M-219 comprising BUTT (Lot 14082), BUTT FR. 1, BUTT FR. 2, BONANZA KING, GALLANT BOY, HARLOCK (Lots 14176 to 14180), plus FI 1 to 24, TROUT 1 to 4, 6, 7, BB 1 and 2, TR 1 and 2 Fractions, and AMERICAN located claims.

OWNER: BURDOS MINES LTD., 515, 602 West Hastings Street, Vancouver V6B 1P2.

METALS: Lead, silver, zinc, copper, (gold).

DESCRIPTION: Phyllite, limestone, and argillite of the Lardeau Group have been intruded by an altered diorite dyke which parallels the regional northwesterly trend. Irregular masses of quartz occur in tension fractures. Galena, pyrite, minor sphalerite, and chalcopyrite in quartz gangue occur in tension fractures.

WORK DONE: Surface diamond drilling, three holes totalling 759 feet on Butt claim.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1923, p. 234 (BUTTE); 1927, p. 295 (Lardo Gold Silver Mines, Ltd.).

WINSLOW, OKANAGAN (82K/NW-24, 25) (Fig. A, No. 71)

LOCATION: Lat. 50° 37′ Long. 117° 23′ (82K/11W)
REVELSTOKE M.D. Seventeen miles southeast of Beaton, east of Trout Lake, at the head of Cup and Burg Creeks, between 6,000 and 7,000 feet elevation.

CLAIMS: WINSLOW (Lot 8680), GLADHAND (Lot 8681), OKANAGAN (Lot 9127), ENDERBY (Lot 9128) Crown-granted claims plus WINDSLOW 1 to 12 located claims.

OWNERS: Corvus Mines Ltd. (formerly Condor Mines Ltd.) and Milestone Mines Ltd.

OPERATOR: CORVUS MINES LTD., 514, 602 West Hastings Street, Vancouver V6B 1P2.

METALS: Gold, silver, lead, zinc.

DESCRIPTION: Pyrite, gold, silver, galena, and sphalerite are present in vein systems associated with shear zones that make an acute angle with the regional trend of host phyllite belonging to the Broadview Formation of the Lardeau Group. A large anticlinal structure strikes to the northwest.

WORK DONE: Road construction, 4.5 miles (from highway northeast to property); trenching, 180 cubic yards on Windslow 5 and Winslow (Lot 8680) claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 76.

SILVER CUP, TOWSER (82K/NW-27, 28) (Fig. A, No. 142)

By P. E. Olson

LOCATION: Lat. 50° 38′ Long. 117° 22′ (82K/11W)
REVELSTOKE M.D. Five miles southeast of Ferguson, at the head of Cup Creek, between 5,500 and 7,000 feet elevation.

CLAIMS: SILVER CUP (Lot 768), TOWSER (Lot 1565), and other adjoining Crown-granted and located claims.

OWNER: PANDORA MANAGEMENT LTD., Kaslo.

METALS: Silver, lead, zinc (production shown on Table I).

WORK DONE: Mine dumps below the upper levels of the mine carry significant amounts of silver, lead, and zinc as a result of hand sorting and the need of taking out lower grades of ore at a time when only rich ore was economical. There have been several attempts to mill these dumps. During 1973, settling ponds and a jig were set up below the main dump on

(82K/12E)

the Towser claim. Concentration proved difficult, resulting in high losses and poor concentrates. Approximately 440 tons of ore was shipped to the Trail smelter.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 77.

MIKE (82K/NW-96) (Fig. A, No. 141)

By P. E. Olson

LOCATION: Lat. 50° 39' Long. 117° 33' (82K/12E)
REVELSTOKE M.D. Approximately 1 mile west of the northwest end of Trout Lake.

CLAIMS: MIKE 1 to 12.

OWNER: H. A. McGOWAN, Ferguson.

METALS: Lead, zinc, silver (production shown on Table I).

WORK DONE: Surface exploration was done and 2 tons of ore was shipped to the Trail smelter.

RUTH VERMONT (82K/NE-9) (Fig. A, No. 145)

By R. W. Lewis

LOCATION: Lat. 50° 57' Long. 116° 59' (82K/15W)
GOLDEN M.D. Twenty-seven miles west of Spillimacheen, on Vermont Creek, a tributary of Vowell Creek, at approximately 6,000 feet elevation.

CLAIMS: Mineral Lease M-16 comprising RUTH, MINNIE (Lots 418 and 419), CHARLOTTE (Lot 405), CLEOPATRA, VERMONT, SHEBA, RUTH FR. (Lots 8122 to 8125), plus surrounding located claims.

OPERATOR: CONSOLIDATED COLUMBIA RIVER MINES LTD., 73 Water Street, Vancouver.

METALS: Silver, lead, zinc, cadmium (production shown on Table I).

DESCRIPTION: The mineral claims overlie rocks of the Horsethief Creek Formation. Mineralization consists of sulphides which have replaced limestone following the trend of numerous fissure veins.

WORK DONE:

The Ruth Vermont mine was formerly operated by Copperline Mines Ltd. until the date of cessation of operation in June 1971.

Consolidated Columbia River Mines Ltd. commenced work on the rehabilitation of the mine and mill facilities in June of 1973 and completed this work by the end of September. The mine and mill were brought into production in October, with underground mining operations being performed by a mining contracting company. Production continued until December 17, when at this time the decision was made to stop production for the remainder of the winter months. Ore production was mainly from room and pillar stoping with a minor amount derived from development which consisted of a total of 326 feet of advance.

Total man-power at the operation was approximately 60 to 65. A total of 26,957 tons of concentrate was shipped to the Trail smelter.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 467; 1971, p. 430.

ECLIPSE (BOB, HL) (82K/NE-24) (Fig. A, No. 75)

LOCATION: Lat. 50° 53′ Long. 116° 44′ (82K/15E)
GOLDEN M.D. Sixteen and one-quarter miles west of Spillimacheen, three-quarters of a mile east-southeast of Warren Creek, 4.5 miles upstream from its mouth.
CLAIMS: BOB 1 to 4, HL 1 to 8, 20 to 25, LIZ 166 and 167.
OWNERS: Carolin Mines Ltd. and H. Sykes.
OPERATOR: JUNIPER MINES LTD., Box 833, Merritt.
METAL: Copper.
DESCRIPTION: Chalcopyrite occurs in quartz veins along faults cutting phyllite of the Horsethief Creek Formation.
WORK DONE: Linecutting, 12.8 miles of grid; geochemical soil survey, 298 samples taken at 200 by 400-foot grid spacing covering Bob 3, 4, Liz 166, 167, and HL 1-8.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 78; Assessment Reports 182, 4716.

VERNON 82L

ROSE (Fig. A, No. 78)

LOCATION: Lat. 50° 08′ Long. 118° 20′ (82L/1W)
VERNON M.D. Twenty-nine miles east-southeast of Lumby, approximately 300 feet due north of Keefer Lake, at the head of Kettle River, at 5,000 feet elevation.
CLAIMS: ROSE 1 to 26.
OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.
DESCRIPTION: Quartzites and argillites of the Permian Cache Creek Group have been cut by a northerly trending, diorite dyke or sill.
WORK DONE: VLF EM survey, 5.7 line-miles and geochemical soil survey, 5.7 line-miles, 324 samples taken at 100 by 400-foot grid spacing covering Rose 1-6.
REFERENCE: Assessment Report 4761.

DONA (82L/SE-16) (Fig. A, No. 77)

LOCATION: Lat. 50° 08′ Long. 118° 24′ (82L/1W)
VERNON M.D. Twenty-five and one-half miles east-southeast of Lumby, on the east slope of Monashee Mountain, 2 miles west of Keefer Lake, at approximately 5,000 feet elevation.
CLAIMS: DONA 1 to 17.
OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.
METALS: Gold, silver, lead, tin.

(82L/1W)

DESCRIPTION: Quartzites and argillites of the Permian (?) Cache Creek Group, intruded by small dioritic plugs, carry veinlets containing galena, stibnite, and arsenopyrite.

WORK DONE: VLF EM survey, 12.5 line miles and geochemical soil survey, 13.2 line-miles, 788 samples taken at 100 by 200-foot grid spacing covering Dona 1-8.

REFERENCE: Assessment Report 4740.

ST. PAUL (82L/SE-10) (Fig. A, No. 76)

LOCATION: Lat. 50° 09′ Long. 118° 27′ (82L/1W)
VERNON M.D. Twenty-four miles east-southeast of Lumby, extending down the north slope of Monashee Mountain to within one-quarter of a mile of Yeoward Creek, at approximately 5,000 feet elevation.

CLAIMS: BLACK BESS, MINERVA, ZILPAH, TOUGHNUT (Lots 4186-4189) plus SNOW, SNOWSHOE, SKB.

OWNER: St. Paul Mines, Ltd.

OPERATOR: W. MILLER, RR 2, Kidston Road, Vernon.

METALS: Gold, silver, antimony, lead, zinc (production shown on Table I).

DESCRIPTION: Gold, silver, antimony, lead, and zinc minerals occur in veins contained within volcanic and sedimentary rocks.

WORK DONE: Trenching, 90,000 cubic feet and stripping, 20,000 square feet on Snow, Toughnut, and Minerva.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 79.

KL (Fig. A, No. 79)

LOCATION: Lat. 50° 08′ Long. 118° 19′ (82L/1W)
VERNON M.D. Twenty-nine and one-half miles east-southeast of Lumby, extending north from approximately one-quarter mile due north of the east end of Keefer Lake, at 4,800 feet elevation.

CLAIMS: KL 1 to 12, KL 13 and 14 Fractions.

OWNER: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver.

DESCRIPTION: The claims are underlain by argillites of the Cache Creek Group.

WORK DONE: Geochemical soil survey, 88 samples, 3.1 line-miles covering KL 1-12.

TOP (82L/SE-17) (Fig. A, No. 81)

LOCATION: Lat. 50° 05′ Long. 118° 32′ (82L/2E)
VERNON M.D. Ten miles southeast of Lumby, extending north and south from Highway 6, at McIntyre Lake, between 4,000 and 4,200 feet elevation.

CLAIMS: TOP 1 and 2, GOLD 1 to 20.

OWNER: E. O. Chisholm.

(82L/2E)

OPERATOR: NEW CINCH URANIUM LTD., 416, 25 Adelaide Street West, Toronto, Ont.

METALS: Gold, silver.

DESCRIPTION: The claims lie near the north margin of the Nelson pluton in an area of pink to cream-coloured massive granite. The granite is cut by a strong, persistent zone of shearing and brecciation which has been traced for over 550 feet and varies in width from 1 foot to over 40 feet. Pyrite, arsenopyrite, and sulphosalts, carrying gold and silver values, occur in fault gouge, quartz, carbonate, and intensely altered granite in the shear zone.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet covering Top 1 and 2; surface workings mapped; road construction, 2,900 feet on Gold 1 and 2; trenching, 270 feet on Top 1 and 2.

McPHAIL, MONASHEE (82L/SE-1, 9) (Fig. A, No. 80)

LOCATION: Lat. 50° 07′ Long. 118° 31′ (82L/2E)
VERNON M.D. Twenty-one miles southeast of Lumby, extending west from Highway 6 at Monashee Pass. The RISKE claim is 1.5 miles east, at the head of Marsh Creek.

CLAIMS: Mineral Lease M-37 comprising ROSSLAND, MASCOT, EVENING STAR (Lots 3766 to 3768), NUMBER FOUR, SNOWSHOE, NUMBER TWO, NUMBER THREE (Lots 3913 to 3916) and Mineral Lease M-38 comprising RISKE (Lot 195).

OWNER: KEDA RESOURCES (1973) LIMITED, Suite 6, 219 Victoria Street, Kamloops.

METALS: Gold, silver, lead, zinc.

DESCRIPTION: Most of the claims are underlain by metamorphosed limestone and subordinate argillite and quartzite of the Cache Creek Group. A lobe of a granodiorite batholith extends onto the Evening Star and Number Four, and the main contact angles across the Number Two. The sedimentary rocks have been injected by northwest-striking quartz veins, of which three carry bunches of fine-grained pyrite, galena, and sphalerite with minor chalcopyrite and tetrahedrite.

WORK DONE: Surface geological mapping, 1 inch equals 450 feet and geochemical soil survey, 138 samples taken at 200 by 500-foot grid spacing, covering all claims.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1914, pp. 359, 360; 1915, p. 252; 1921, p. 191; Assessment Report 4771.

PETE (Fig. A, No. 82)

LOCATION: Lat. 50° 03′ Long. 119° 14′ (82L/3E)
VERNON M.D. Fourteen and one-half miles south of Vernon, covering and surrounding Swalwell Lake.

CLAIMS: PETE 1 to 27.

OWNER: WESTLEY MINES LIMITED, 5821 Dalgleish Road NW., Calgary, Alta.

WORK DONE: Linecutting, 6.1 miles of grid; VLF EM and magnetometer surveys, 5.5 line-miles each covering Pete 8, 10, 12, 14, 17, 20, 25-27.

REFERENCES: Assessment Reports 4798, 4799.

WADE, (Fig. A, No. 14)

LOCATION: Lat. 50° 22′ Long. 120° 00′ (82L/5W; 92I/8E)
KAMLOOPS M.D. Eleven and one-half miles southwest of Westwold and about 32 miles west-northwest of Vernon, astride Weyman Creek.

CLAIMS: WADE 1 to 8.

OWNER: W. Tisdale.

OPERATOR: DARMA EXPLORATIONS LTD., 400, 153 Seymour Street, Kamloops.

WORK DONE: Linecutting.

REFERENCE: Assessment Report 4241.

BLACK HAWK (BJ) (82L/SW-7) (Fig. A, No. 84)

LOCATION: Lat. 50° 25′ Long. 119° 23′ (82L/6W)
KAMLOOPS and VERNON M.D. Eleven miles north-northwest of Vernon, extending from Gurney Creek to Moffat Creek.

CLAIMS: AU 1 to 16, 18, 19.

OWNER: KEDA RESOURCES (1973) LIMITED, Suite 6, 219 Victoria Street, Kamloops.

METALS: Gold, silver, zinc.

DESCRIPTION: The claims are underlain by argillite and chloritized andesite of the Cache Creek Group. A shear zone of argillite near the contact contains a quartz vein and sulphides disseminated through the sheared rocks. At the East showing the zone is 20 feet wide and carries pyrite, arsenopyrite, and sphalerite, with traces of chalcopyrite and galena. At the West showing minor pyrite and arsenopyrite occur across 4 feet of sheared rock. The vein is very sparsely mineralized.

WORK DONE: Geochemical soil survey, 95 samples taken at 100 by 200-foot grid spacing; VLF EM survey, 3 line-miles; two short lines tested with SP and 'shootback' EM and one with magnetometer.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1922, p. 144; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 239; Assessment Report 4797.

AB (82L/SW-67; 82L/NW-38) (Fig. A, No. 85)

LOCATION: Lat. 50° 30′ Long. 119° 29′ (82L/6W, 11W)
KAMLOOPS M.D. Two and three-quarter miles due east of Falkland, extending down a steep, southwesterly slope from Silvernail Lake, at approximately 4,000 feet elevation.

CLAIMS: AB 7 to 22.

OWNER: J. Currie.

OPERATOR: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METAL: Copper.

DESCRIPTION: The property is underlain mainly by Cache Creek argillite, with some biotite-chlorite schist and calcareous talc schist near the centre of the claim area. Chalcopyrite and pyrite are disseminated through a gneissic unit in the schists and through a small outcrop of impure limestone in a creek bed to the northeast.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering AB 9-12, 18, 20; geochemical soil survey, 13 line-miles, 722 samples taken at 100 by 200-foot grid spacing covering same claims.
REFERENCE: Assessment Report 4830.

MOUNT VERNON (SILVER STREAK, DCK) (82L/SW-8) (Fig. A, No. 83)

LOCATION: Lat. 50° 17′ Long. 119° 10′ (82L/6E)
VERNON M.D. Three miles east of Vernon, on Vernon Hill, stretching from Becker Lake to Brookside and Bate Creeks, at approximately 4,000 feet elevation.
CLAIMS: SILVER STREAK, DCK, ANNE, WCR, DENYSE, DAKOTA, GOLD, COPPER, X, totalling approximately 115.
OWNERS: King Graybarr Mines Ltd. and Vernon Copper Ltd.
OPERATOR: KING GRAYBARR MINES LTD., Box 904, Vernon.
METALS: Lead, zinc, silver, gold, copper, molybdenum, nickel, cobalt, cadmium.
DESCRIPTION: Copper and molybdenum mineralization is present in highly fractured diorite, and quartz veins, 6 to 8 feet wide, carry silver-bearing galena and sphalerite.
WORK DONE: Trenching, 1,560 feet on Copper, Gold, and Silver Streak; stripping, 40,000 cubic feet on DCK 1 and 2 Fractions, DCK 55, and ANNE 4.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 80 (DCK).

SH (82L/SE-19) (Fig. A, No. 87)

LOCATION: Lat. 50° 18′ Long. 118° 49′ (82L/7W)
VERNON M.D. Seven and one-half miles northeast of Lumby, stretching from Shuswap Falls north-northwest past the junction of Bessette Creek and Shuswap River, at approximately 2,500 feet elevation.
CLAIMS: SH 1 to 15.
OWNER: STANHOLM RESOURCES LTD., 1545 Harvey Avenue, Kelowna.
METAL: Uranium.
DESCRIPTION: Uranium mineralization is associated with pegmatite.
WORK DONE: Road construction, 500 feet (old trail improved) on SH 12 and 14; trenching, 150 feet on SH 12 and 14.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 80.

A, NEWF (82L/SE-18) (Fig. A, No. 86)

LOCATION: Lat. 50° 24′ Long. 118° 35′ (82L/7E)
VERNON M.D. Nineteen miles northeast of Lumby, at the headwaters of Ireland and Reiter Creeks, extending east to Sugar Lake.
CLAIMS: A 1 to 27, NEWF 1 to 15.
OWNERS: B. Turner and H. Hatchard.
OPERATOR: TORONADO DEVELOPMENT CORP. LTD., 107, 325 Howe Street, Vancouver.

(82L/10E)

METAL: Copper.

DESCRIPTION: Schists and gneiss of the Monashee Group strike northwest and dip gently to moderately northeast. An extensive rusty, fine-grained biotite schist contains traces of pyrrhotite, pyrite, chalcopyrite, and at an old log camp on A 4 it contains lenses of massive pyrrhotite with appreciable chalcopyrite and some hydrozincite stain.

WORK DONE: Reconnaissance geological mapping along roads; geochemical soil survey, 111 samples taken on two widely spaced lines at 100-foot intervals covering Newf 4, 6, 10-13 and A 1-4, 7, 9-12, 16, 18, 20-24, 26.

REFERENCE: Assessment Report 4609.

OK (82L/NE-13) (Fig. A, No. 88)

LOCATION: Lat. 50° 40' Long. 118° 41' (82L/10E)
VERNON M.D. Thirty-one miles southwest of Revelstoke, 5 miles north-northeast of Kingfisher, immediately west of Mabel Lake, at approximately 2,500 feet elevation.

CLAIMS: OK 1 to 8.

OWNER: K. ROSS, Box 1297, Vernon.

METALS: Zinc, lead.

DESCRIPTION: A highly deformed sequence of high-grade metasedimentary rocks, including marble, calc-silicate gneiss, biotite gneiss, and quartzite has been intruded by pegmatite dykes. Disseminated sphalerite, galena, pyrite, pyrrhotite, and minor chalcopyrite occur as stratiform zones.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering OK 1-4; trenching.

BUDGET (MM) (82L/NW-35) (Fig. A, No. 15)

LOCATION: Lat. 50° 34' Long. 119° 36' (82L/12E)
KAMLOOPS M.D. Five miles north-northwest of Falkland, extending south-southeast from Blair Creek and Joyce Lake to Arthur Creek, between elevations of 3,000 and 4,500 feet.

CLAIMS: BUDGET 1 to 48.

OWNER: CANADIAN JOHNS-MANVILLE COMPANY LIMITED, 9, 219 Victoria Street, Kamloops.

METAL: Copper.

DESCRIPTION: The claims are underlain by interbedded Cache Creek quartzite, quartz-mica schist, and andesite, irregularly intruded by small stocks, sills, and dykes ranging in composition from quartz diorite to pyroxenite. All rocks are intensely altered. Chalcopyrite and malachite fill fractures and are disseminated in andesite and quartz-mica schist.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering all claims; IP survey, 5 line-miles covering Budget 27-32; geochemical soil survey, 1,297 samples, approximately 15 line-miles covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 81; Assessment Reports 4271, 4735.

HYAS, RHO **(Fig. A, No. 17)**

LOCATION: Lat. 50° 47' Long. 119° 57' (82L/13W)
KAMLOOPS M.D. Twenty miles northeast of Kamloops, surrounding Hyas, Pemberton, and Rhoda Lakes, at approximately 4,000 feet elevation.

CLAIMS: HYAS 1 to 37, 41 to 46, RHO 1 to 16, 19 to 34, 39 and 40.

OWNER: SPIRIT EXPLORATIONS LTD., 616, 850 West Hastings Street, Vancouver.

DESCRIPTION: There is very little outcrop in the claim area, however, Geological Survey of Canada Map 1059A indicates the bedrock to be of the Cache Creek Group of Permian age. Basic intrusive rocks were found to the northeast of the claim group. Some quartzite float carrying pyrite was found on the property.

WORK DONE: Linecutting; magnetometer survey, 68 line-miles; geochemical soil survey, 68 line-miles, 1,760 samples taken at 200 by 500-foot grid spacing covering all claims; road construction, 4 miles (one north for 1.3 miles – access to southeast corner of Rho claims and one south for 2.7 miles – access to north end of Hyas claims).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 82; Assessment Reports 4389, 4741.

PEM, HY **(Fig. A, No. 16)**

LOCATION: Lat. 50° 47' Long. 119° 58' (82L/13W)
KAMLOOPS M.D. Twenty miles northeast of Kamloops, surrounding Warren and Pemberton Lakes, between 4,000 and 5,000 feet elevation.

CLAIMS: PEM 1 to 19, 21, 27 to 36, 41 to 50, HY 1 to 26, 29, 30, HELLO 1 to 4.

OWNER: DRESSER INDUSTRIES, INC., Dresser Minerals Division, 525, 404 Sixth Avenue SW., Calgary, Alta.

DESCRIPTION: Drilling on the west side of Pemberton Lake intersected 100 feet of amygdaloidal lava above argillaceous shale, suggesting the presence of Kamloops Tertiary volcanic rocks overlying Cache Creek sedimentary rocks.

WORK DONE: 1970 – airborne electromagnetic and magnetometer survey covering whole area; 1971-1972 – claims staked, geochemical soil sampling, horizontal and vertical loop EM survey, 753 feet of core drilling; 1973 – vertical loop electromagnetic and magnetometer surveys covering Pem 2-4, 10, 13, 15, 30-32, 42 and HY 1-12, 25, 26.

REFERENCE: Assessment Report 4239.

ANNIS **(82L/NW-21, 23-25)** **(Fig. A, No. 89)**

LOCATION: Lat. 50° 47' Long. 119° 04' (82L/14E)
KAMLOOPS M.D. Four and one-half miles southwest of Sicamous, on the ridge and northwest slope between Mara Lake and the Salmon Arm of Shuswap Lake, between 2,000 and 3,000 feet elevation.

(82L/15W)

CLAIMS: JOANNE 1 to 10, MOUSE 1 to 10.

OWNER: SICAMOUS RESOURCES LTD., 1008, 1666 Pendrell, Vancouver.

METALS: Lead, zinc, silver, minor copper.

DESCRIPTION: The Joanne 1 to 4 claims are underlain by interbedded quartzite, micaceous quartzite, and schist of the Mara Formation. Small lenses of pyrite, sphalerite, galena, and minor copper sulphide occur along the schist beds parallel to the bedding.

WORK DONE: Surface geological mapping; 1 inch equals 250 feet; VLF EM survey; geochemical soil survey, 179 samples; and linecutting covering Joanne 1-4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 319; Assessment Report 4453.

MOLY (LH) (Fig. A, No. 18)

LOCATION: Lat. 50° 59′ Long. 118° 48′ (82L/15W)
REVELSTOKE M.D. Two and one-half miles due north of Malakwa and 26 miles west of Revelstoke, on the steep east slopes of Queest Mountain, astride Legerwood Creek, between 2,000 and 4,500 feet elevation.

CLAIMS: MOLY 1 to 18.

OWNER: DARVA RESOURCES AND DEVELOPMENT LTD., 1155, 555 Burrard Street, Vancouver.

METAL: Molybdenum.

DESCRIPTION: The claims cover granite, granite gneiss, and mica schist of the Shuswap Complex. Molybdenite occurs in a north-trending, flatly west-dipping shear zone in granitoid rocks.

WORK DONE: Claims surveyed; chain and compass survey, 13.2 line-miles and ground magnetometer survey, 13.2 line-miles covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 435; Assessment Report 4369.

SEYMOUR ARM 82M

MOUNT COPELAND MINE (82M-2) (Fig. A, No. 107)

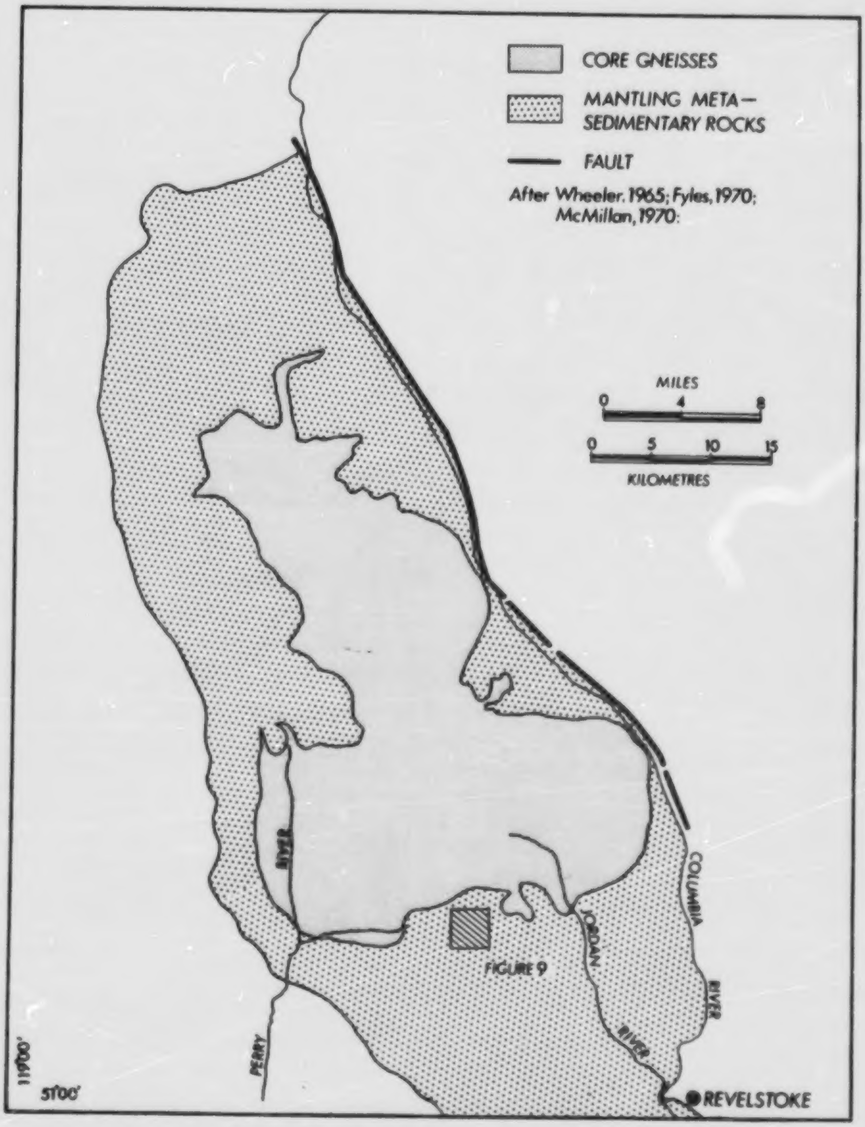
By W. J. McMillan

LOCATION: Lat. 51° 08′ Long. 118° 28′ (82M/1W)
REVELSTOKE M.D. Fifteen miles northwest of Revelstoke, on Mount Copeland, between Hiren and Copeland Creeks and west to the head of Bews Creek, at approximately 7,000 feet elevation.

CLAIMS: KNOX 1 to 69, 71 to 128, ARM 1 to 18, 21 to 23, 35, AVA 9 to 11, 20 to 24, 33 to 40, 48 to 58, 60, 62, 64, AA 101, 102, 105 to 108, 115 to 128, 130, 132, plus JRE, GRIZ, HAP, KEN, etc., totalling approximately 290.

OWNER: King Resources Company.

OPERATOR: KRC OPERATORS LTD., Box 1700, Revelstoke.



CORE GNEISSES
MANTLING META-SEDIMENTARY ROCKS
FAULT
After Wheeler, 1965; Fyles, 1970; McMillan, 1970:
MILES
0
4
8
0
5
10
15
KILOMETRES
RIVER
COLUMBIA
RIVER
JORDAN
RIVER
FIGURE 9
PERRY
119°00'
51°00'
REVELSTOKE

Figure 8. Generalized geology and setting of Frenchman Cap gneiss dome.

METAL: Molybdenum (production shown on Table I).

DESCRIPTION:

ACKNOWLEDGMENTS: This report draws heavily on work done in the Jordan River area by Dr. James T. Fyles. The writer spent two seasons mapping similar rocks in the Perry River area, but field work for this report consisted of only two days in May of 1973. Both days were spent underground studying rocks of the Glacier zone. The cooperation and help of the mine manager, W. G. Fothergill; the mine superintendent, W. Patterson; and the mine surveyor, A. Carron were greatly appreciated.

HISTORY: Molybdenite showings on the north flank of Copeland Ridge were discovered and claims staked by E. H. Ewar and associates in 1964. The claims covering the showings were called the Joan group. In 1965 King Resources Company optioned the claims and then mapped, sampled, and drilled the showings in the period of 1965 to 1967. In 1967 the Joan claims were abandoned and relocated by KRC Inc. (King Resources Company) as the Knox group. Underground exploration commenced in September of 1967.

During 1968 an access road was constructed up Hiren Creek and the south adit was driven to intersect the earlier workings. A decision to go into production was made in 1969 and installation of a 200-ton-per-day crusher and concentrator was completed in February of 1970. Development work was underway simultaneously and production officially began on July 1, 1970. At that time, reserves were 180,000 tons of 1.82 per cent MoS_2.

Production to the end of 1973 was 188,602 tons from which 2,352,547 pounds of molybdenite was recovered. Production ceased in July of 1974 and the mine was officially closed in October 1974. Almost all production during the life of the mine was from a locality called the Glacier zone.

REGIONAL GEOLOGY: The Shuswap Metamorphic Complex, first described by G. M. Dawson in the late 1800's, is a narrow belt of high-grade metamorphic rocks in the Columbian orogen of southeastern British Columbia. The Frenchman Cap dome is one of a series of gneiss domes which occur along the eastern border of the Shuswap Complex. This dome, which is centred 20 miles (32 kilometres) northwest of Revelstoke, has a core zone of migmatite and a fringing zone of metasedimentary rocks (Fig. 8).

The Frenchman Cap dome was mapped on a regional scale by Wheeler in 1965. Subsequently, more detailed studies were conducted along the west side of the dome by McMillan (1970) and along the south side by Fyles (1970).

Concordant bodies of syenite and nepheline syenite gneiss were recognized within the metasedimentary envelope of the dome in both the Jordan River (Wheeler, 1965) and Perry River areas (McMillan, 1970). Molybdenite occurs as an accessory mineral in the syenite gneiss as well as within contained aplitic and pegmatitic zones. It also occurs in metasedimentary rocks adjacent to the syenites in Jordan River area.

Field, petrographic, and to a lesser extent, chemical evidence (Fyles, 1970; McMillan, 1974) suggest the syenitic gneisses were emplaced as sills, and that these sills were emplaced before Shuswap deformation and metamorphism (McMillan, 1970; Fyles, 1970).

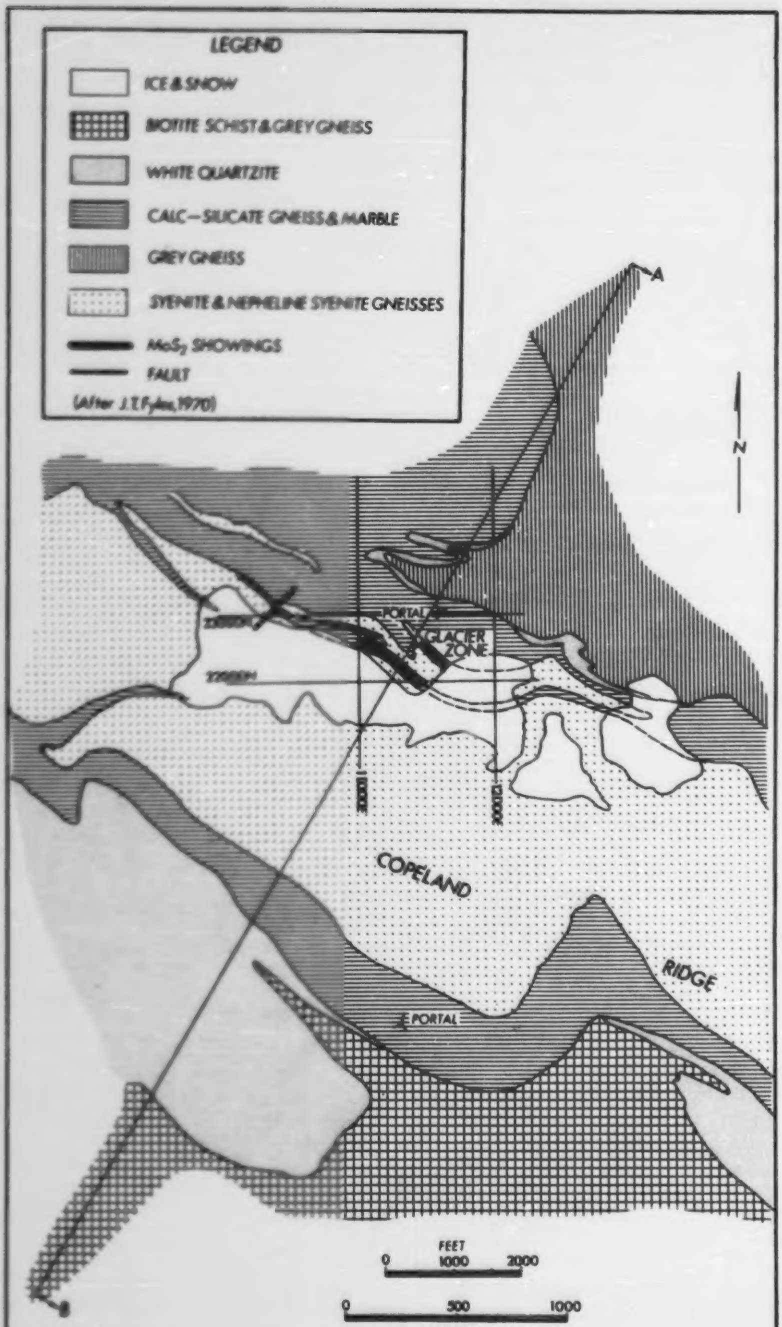

LEGEND
ICE & SNOW
BIOTITE SCHIST & GREY GNEISS
WHITE QUARTZITE
CALC—SILICATE GNEISS & MARBLE
GREY GNEISS
SYENITE & NEPHELINE SYENITE GNEISSES
MoS₂ SHOWINGS
FAULT
(After J.T.Fyles,1970)
A
N
PORTAL
GLACIER ZONE
23000N
22000N
10000E
12000E
COPELAND
RIDGE
PORTAL
FEET
0
1000
2000
0
500
1000
METRES
B

Figure 9. Geology of Copeland Ridge, Jordan River area, showing location of mineralized zones of Mount Copeland mine.

LOCAL GEOLOGY: The metasedimentary succession underlying Copeland Ridge (Fig. 9) comprises a series of mappable units of biotite schist and grey gneiss, white quartzite, calc-silicate gneiss and marble, and grey gneiss. Concordant bodies of nepheline syenite gneiss occur with the calc-silicate gneiss and marble unit.

The rocks have been metamorphosed and subjected to three phases of deformation (Fyles, 1970). The oldest folds are recumbent and isoclinal with deformed axial surfaces and shallow easterly or westerly plunging axes. Second phase folds have overturned axial surfaces which dip steeply to the southwest and south. These folds dominate rock unit map patterns. For example, all the folds portrayed on Figure 10 belong to Phase 2. The broad curvature of the foliation around the southwest corner of the dome is referred to as a Phase 3 fold.

Nepheline syenite gneiss is most abundant along Copeland Ridge. Fyles (1970) describes the rock as a grey, medium-grained feldspar biotite gneiss that is locally calcareous. Diagnostic features used to distinguish it in the field from other grey gneisses are its lack of quartz, locally pitted weathered surface, and effervescence of some specimens with acid. The margins of the syenite bodies are nepheline-free, which may be the result of reaction with enclosing rocks.

Lenses of syenite pegmatite or syenite aplite are fairly common along the northern border of the nepheline syenite unit and, because of their concentrations of molybdenite, are the focus of economic interest. These pegmatites and aplites have both sharp and gradational contacts with enclosing syenite gneisses. Characteristically they lie parallel to foliation but they cross it locally. Massive disseminated molybdenite occurs randomly in the aplite and pegmatite lenses and to a lesser extent in calc-silicate gneisses adjacent to the syenite gneiss contact. During the life of Mount Copeland mine, almost all production was from these aplite-pegmatite bodies within the syenite gneisses.

Geology, Ore Mineralogy, and Structural Geology of the Glacier Zone: The productive Glacier zone occurs in a digitation which is either a fold limb or a sill of syenite gneiss in the calc-silicate gneiss unit (Fig. 9). In this digitation, the syenite gneiss appears to be free of nepheline. In most specimens perthitic microcline is the dominant mineral but in some sodic oligoclase (An_{10-15}) forms up to 40 per cent of the feldspar present. Microscopically, string, rod, bead, and interlocking types of perthite can be seen. The amount of exsolved albitic plagioclase varies from being a minor component, up to half of the perthitic mixture.

Biotite is the most common mafic mineral normally forming about 20 per cent of the syenites. It is seen microscopically, to be pleochroic from chocolate brown to tan. Locally, amphibole occurs which is black in hand specimen but pleochroic from turquoise to green to brown in thin section. The mineral does not extinguish when the microscope stage is rotated and pleochroic colours mask its birefringence. Its 2V is apparently small and negative. This optical evidence suggests that the mineral is ferrohastingsite.

Calcite is commonly present in small amounts and locally is prominent. Minor constituents of the rock include zircon, sphene, apatite, and magnetite. Some specimens also contain fluorite, some pyrite and/or pyrrhotite, and some molybdenite.

The syenite gneisses contain scattered pods of molybdenite-bearing leucocratic aplite and pegmatite syenite. The Glacier zone is a lens up to 10 feet thick of such pegmatite and aplite. It has been folded into tightly appressed, overturned Phase 2 folds (Fyles, 1970)

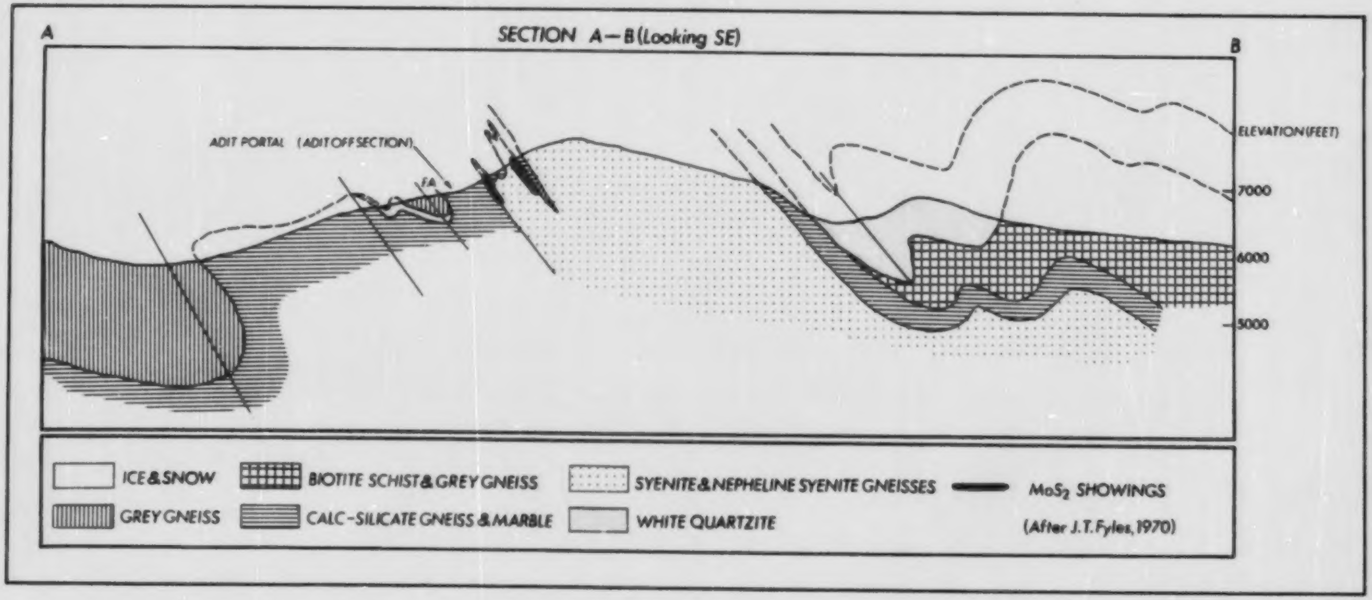

A
SECTION A—B (Looking SE)
B
ADIT PORTAL (ADIT OFF SECTION)
F.A.
ELEVATION (FEET)
7000
6000
5000
ICE & SNOW
GREY GNEISS
BIOTITE SCHIST & GREY GNEISS
CALC-SILICATE GNEISS & MARBLE
SYENITE & NEPHELINE SYENITE GNEISSES
WHITE QUARTZITE
MoS_2 SHOWINGS
(After J.T. Fyles, 1970)

Figure 10. Section A-B drawn from Figure 9 to indicate the structural setting of the Mount Copeland mine.

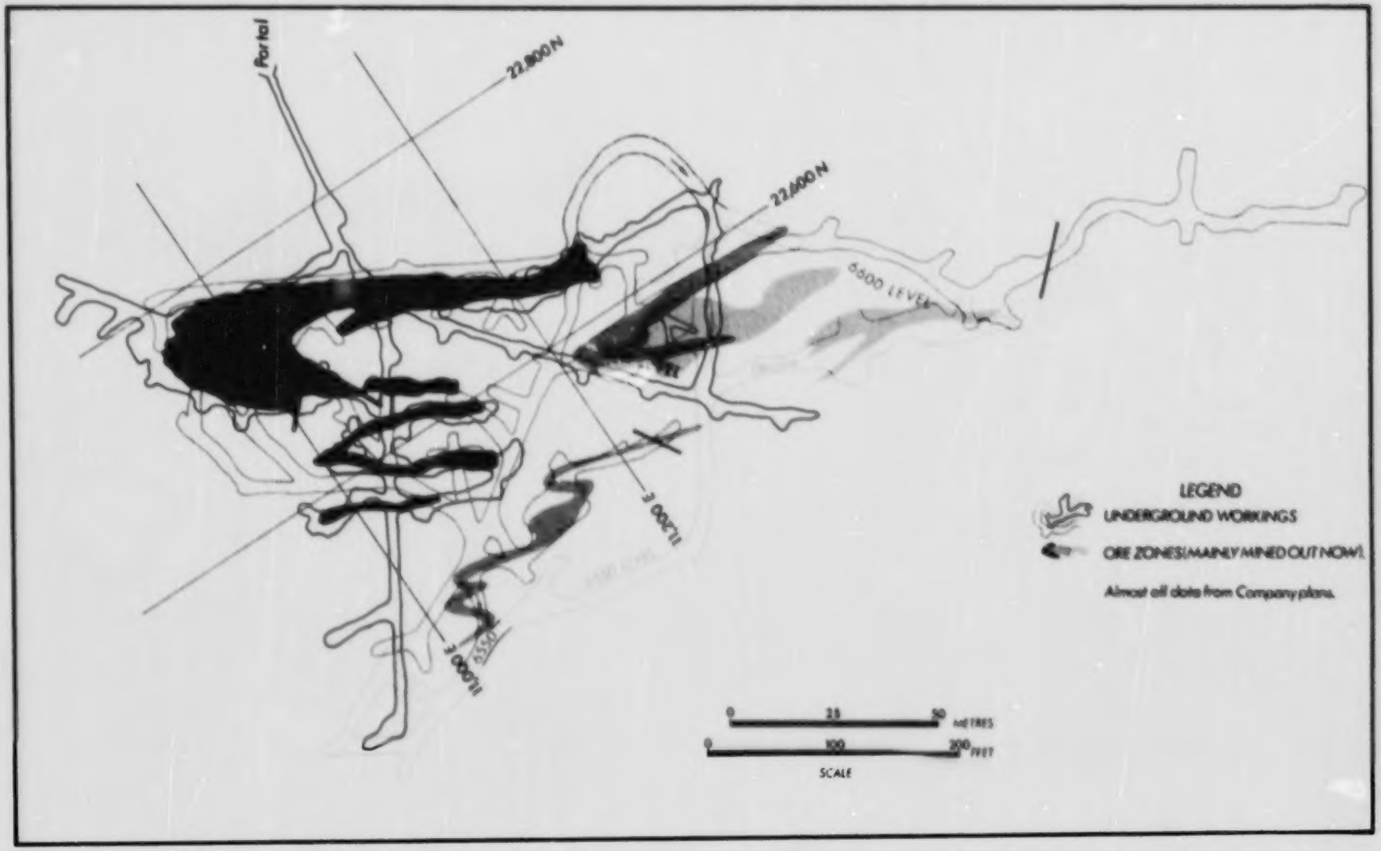

Portal
22,800 N
22,600 N
6600 LEVEL
11,200 E
11,000 E
6550
LEGEND
UNDERGROUND WORKINGS
ORE ZONES(MAINLY MINED OUT NOW)
Almost all data from Company plans.
0
25
50
METRES
0
100
200
FEET
SCALE

Figure 11. Plan of Mount Copeland mine workings, showing the 6550, 6600, and 6670 levels. The distribution of ore zones illustrates tight folding and a gentle southeastward axial plunge.

that plunge 15 degrees southeastward (Fig. 11). The axial surfaces of the folds dip at moderate angles toward the south. In the 6550 east decline of the mine, Phase 2 minor folds (Plate II) are parallel to the ore folds and support the interpretation that the ore folds are Phase 2 folds. In the figure, these minor folds deform what appears to be a recumbent Phase 1 fold. In detail, the aplite-pegmatite zones are irregular and molybdenite distribution is highly variable.

The pegmatites and aplites have similar mineralogies. Both are leucocratic relative to the enclosing gneisses but both have local mafic-rich folia and lenses. K-feldspar is the dominant mineral. In the pegmatite, greenish yellow microcline cyrstals or crystal aggregates attain widths of 3 inches. Exsolved albitic plagioclase locally forms as much as 40 per cent of these crystals. Both aplite and pegmatite form lenses in the host syenite gneisses and contacts between the aplites, pegmatites, and syenites may be either sharp or gradational. Locally the pegmatite matrix consists of masses of calcite that contain clusters of biotite, pyrrhotite, pyrite, and ilmenite (Fyles, 1970). Minor amounts of zircon are present in most of the specimens; quartz is rare but occurs interstitially or as vug fillings. The oxide minerals, magnetite and ilmenite, are fairly common and locally form equant blobs up to three-quarters of an inch across. Sulphide minerals present include pyrite, pyrrhotite, molybdenite, and rare chalcopyrite. Sulphides fill cracks in the oxide minerals and apparently post-date them.

Molybdenite has a number of habits; it may be disseminated, form clumps and rosettes of crystals along hairline cracks, fill vugs, or occur as intergrowths with calcite, sericite, and K-feldspar. Large crystals of molybdenite contain inclusions of K-feldspar, calcite, and zircon. However, molybdenite also occurs in K-feldspar crystals and commonly is concentrated around K-feldspar megacrysts in the pegmatites. Pyrrhotite and pyrite are also distributed as disseminations, fracture fillings, and line or fill vugs.

ALTERATION AND VEINING: In the syenite gneisses, feldspars are clouded by kaolinite alteration or stained pink by sericite-calcite alteration. Biotite is locally chloritized. The pegmatite-aplite zones are similarly altered. Epidote and chlorite coat late-stage fractures in the rocks. Veinlets commonly consist of calcite, K-feldspar, chlorite, or rarely, quartz.

ORIGIN OF MINERALIZATION AND ALTERATION: Molybdenite-bearing pegmatitic and aplitic segregations locally crosscut layering in the syenite gneisses that outlines Phase 1 folds. Therefore, aplite-pegmatites formed or were remobilized after the main Phase 1 deformation and were involved in and possibly locally remobilized during Phase 2 deformation.

Mineral assemblages indicate that pressure and temperature conditions of the sillimanite, almandine, orthoclase subfacies of the almandine-amphibolite facies were attained in the Jordan River area. Sparse evidence indicates that metamorphic conditions peaked during or after Phase 2 deformation (McMillan, 1970). Consequently, it is likely that Mount Copeland mine ore was metamorphosed by or formed under conditions of high-grade metamorphism.

In contrast, the alteration mineral assemblages found indicate formation under pressure-temperature conditions of the green schist facies or lower. Chloritization of biotite and formation of epidote and chlorite on fractures are post-ore and later than high-grade metamorphic features. Kaolinite is not stable under conditions of the green

Plate II. Mount Copeland mine — On a vertical joint surface in the roof of the 6550 decline Phase 2 folds are seen deforming what may be a recumbent Phase 1 fold. The pencil is 5.5 inches (13.9 centimetres) long.

schist facies; therefore, kaolinite-sericite-calcite alteration of feldspars probably occurred even later. These alteration events may be related to an igneous event dated at 44±3 m.y. during which lamprophyre dykes were injected (Wanless, *et al.*,, 1973, p. 25).

GENERAL COMMENTS: Nepheline syenite gneisses and local associated carbonatites (McMillan, 1973) form concordant layers within the metasedimentary envelope of the Frenchman Cap dome. The rocks are easily overlooked on a reconnaissance survey and more alkalic bodies can probably be found by mapping areas 'stratigraphically' above white quartzite units mapped by Wheeler (1965).

The syenite gneisses are favourable prospecting targets for molybdenum mineralization, particularly zones with aplitic and pegmatitic segregations. McMillan (1973, 1974) found small amounts of molybdenite, pyrochlore, and columbite-tantalite in carbonatites associated with the nepheline syenite gneisses in the Perry River area. Locally, specimens assayed 0.5 per cent Nb_2O_5. Similar carbonatites are known from the Blue River area (McCammon, 1953), and it is likely others occur in the vicinity of the Frenchman Cap dome.

WORK DONE: Underground geological mapping, 1 inch equals 20 feet and 1 inch equals 100 feet; underground diamond drilling, 32 holes totalling 2,312 feet on Hap 4; exploration and development, 44.5 feet and stope development, 650.5 feet on Hap 4.

REFERENCES: Fyles, James, T. (1970), Jordan River Area near Revelstoke, British Columbia, *B.C. Dept. of Mines & Pet. Res.*, Bull. 57, 64 pp.; McCammon, J. W., Lempriere, *Minister of Mines, B.C.*, Ann. Rept., 1952, pp. 115-119; McMillan, W. J. (1970), Petrology and Structure of West Flank, Frenchman's Cap Gneiss Dome, near Revelstoke, British Columbia, unpublished Ph.D. thesis, *Carleton University*, 150 pp.; McMillan, W. J. (1973), Geology of West Flank, Frenchman's Cap Gneiss Dome, *Geol. Surv., Canada*, Paper 71-29, 88 pp.; McMillan, W. J. (1974), Gneissic Alkalic Rocks and Carbonatites in the Frenchman's Cap Gneiss Dome, Shuswap Complex, B.C., *Cdn. Jour. Earth Sci.*, Vol. 11, pp. 304-318; Wanless, R. K., Stevens, R. D., Lachein, G. R., Delabio, R. N (1973), Age Determinations and Geological Studies, *Geol. Surv., Canada*, Paper 73-2.

TOM (82M-55) (Fig. A, No. 90)

LOCATION: Lat. 51° 02′ Long. 119° 43′ (82M/4E)
KAMLOOPS M.D. Thirty-six miles west-southwest of the settlement of Seymour Arm, extending south on the east side of Adams Lake from a point opposite Skwaam Bay.

CLAIMS: AD 1 to 4, BEE 1 to 4, BON 1 to 4, DAY 1 to 4, LEN 1 to 4, ZEE 1 to 4.

OWNERS: Lorne Donovan, Stanley Kostiuk, Steve Clark, and Leonard Sprackman.

OPERATOR: AGATE BAY MINING LTD., 2173A Dundas Street, Vancouver V5L 1J7.

METALS: Gold, silver, lead, zinc, copper.

(82M/4W)

DESCRIPTION: Permian or younger greenstone, schist, limestone, and quartzite of the Monashee Group trend northwesterly and dip from 20 to 65 degrees northeasterly. The contorted, altered schists contain veins and lenses of quartz carrying pyrite, galena, sphalerite, pyrrhotite, chalcopyrite, and limonite.

WORK DONE: Geochemical soil survey, 183 samples taken on 100 by 400-foot grid spacing covering Bee 1-4 and Day 1, 3, 4.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, p. 134; Assessment Report 4504.

HOMESTAKE (82M-25) (Fig. A, No. 149)

By E. Sadar

LOCATION: Lat. 51° 07' Long. 119° 50' (82M/4W)
KAMLOOPS M.D. Two and three-quarter miles northwest of the head of Skwaam Bay on Adams Lake, on Sinmax and Homestake Creeks, immediately north of the road.

CLAIMS: HOMESTAKE, MAPLELEAF, TROUBLESOME, ARGENTUM, SILVERSTAR FR. (Lots 827 to 830, 4566, respectively) plus 106 located claims including DELL, FRED, H, JOE, KAM, MAX, and RAY.

OWNERS: Kamad Silver Co. Ltd. and Canadian Reserve Oil and Gas Ltd.

OPERATOR: CANADIAN RESERVE OIL AND GAS LTD., 907, 235 First Avenue, Kamloops.

METALS: Barite, silver, zinc, lead, copper, minor gold.

DESCRIPTION: The rocks in the area are members of the Adams Lake series of the Shuswap Complex. In the vicinity of the mine, the main member is a quartz-sericite-talc schist. Argillite bands overlie sericite schist at higher elevations. Chloritic beds are present in the general vicinity. The general dip is northeast varying from 15 degrees to 40 degrees. Three main zones of mineralization occur as 'veins' conforming to the dip of the beds. The zones contain barite, tetrahedrite, proustite, galena, sphalerite, chalcopyrite, pyrite, and minor gold. Percentages of the individual minerals vary independently.

WORK DONE:

Mining of the orebodies has not started at this time. It is planned to use a modification of breast and pillar stoping to mine this orebody.

The following work was carried out during the year: underground geological mapping, 1 inch equals 20 feet and 1 inch equals 40 feet covering Lots 827 and 829; underground diamond drilling, 12 holes totalling 2,253 feet on Lot 829; underground workings surveyed; adit driven at 1,750 feet elevation, 1,899 feet; three remuck stations cut out, 100 feet; bottom of ore-pass raise collared, 20 feet; drifting and raising, 465 feet; slashing, 6,880 feet; bad section of ground timbered on 2250 level.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 437; 1972, pp. 86, 87.

JUNE, KAYJUN (82M-58) (Fig. A, No. 92)

LOCATION: Lat. 51° 15′ Long. 119° 48′ (82M/5W)
KAMLOOPS M.D. Thirty-seven miles due west of the settlement of Seymour Arm, extending east from the southeast end of East Barriere Lake, at approximately 2,400 feet elevation.

CLAIMS: JUNE 1, KAYJUN 1 to 14, 17, 18, KAYJUN 15 and 16 Fractions.

OWNER: Red River Mines Ltd.

OPERATOR: WESTERN MINES LIMITED, Box 8000, Campbell River.

METALS: Lead, zinc, silver, minor copper.

DESCRIPTION: Galena, sphalerite, and minor chalcopyrite have replaced calcareous horizons, adjacent to a quartz stockwork, in the Cache Creek Group of sericite schists, phyllites, quartz-biotite schists, and interbedded argillaceous marble.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; airborne EM survey, 8 line-miles; airborne magnetometer survey, 8 line-miles; and geochemical survey, 6.7 line-miles, 420 soil samples and 122 rock chip samples taken at 10-foot intervals along a trench covering all claims; surface diamond drilling, one hole totalling 176 feet on June 1.

REFERENCES: Assessment Reports 4579, 4685.

EBL-REM (82M-51) (Fig. A, No. 93)

LOCATION: Lat. 51° 19′ Long. 119° 47′ (82M/5W)
KAMLOOPS M.D. Thirty-six miles west-northwest of the settlement of Seymour Arm, extending northwest from the north shore of East Barriere Lake, at approximately 3,800 feet elevation.

CLAIMS: EBL 1 to 56, 55A, 56A, 57 to 92, 93 and 94 Fractions, REM 1 to 18, BRAD 1 to 6, SNARK 1 and 2 Fractions.

OWNER: Pan Ocean Oil Ltd.

OPERATOR: WESTERN MINES LIMITED, Box 8000, Campbell River.

METAL: Copper.

DESCRIPTION: Cache Creek sericite, schist, chlorite schist, meta-arkose, and quartzite or rhyolite are adjacent to a Jurassic/Cretaceous granodiorite intrusion to the east. Disseminated pyrite, pyrrhotite, and chalcopyrite occur in the chlorite schist with some skarn-type mineralization close to the intrusive contact.

WORK DONE: Topography mapped; core relogged; airborne EM and magnetometer survey, 80 line-miles covering all the Snark, Rem, and Brad claims and EBL 1-70, 75, 81, 82, 85, 86, 89, and 90.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 87; Assessment Report 4685.

NSP (82M-127) (Fig. A, No. 91)

LOCATION: Lat. 51° 17′ Long. 119° 37′ (82M/5E)
KAMLOOPS M.D. Six miles due east of East Barriere Lake, on the ridge 1 mile south of East Barriere River, at approximately 4,700 feet elevation.

(82M/7W)

CLAIMS: NSP 1 to 64.

OWNER: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.

METAL: Copper.

DESCRIPTION: Chalcopyrite occurs as disseminations and in thin quartz stringers parallel to the foliation in quartz-biotite gneiss which is intercalated with granite of the Baldy batholith and schist and greenstone of the Adams Lake Group.

WORK DONE: IP survey, 6.9 line-miles covering NSP 5-12, 17-22, 31, 33, 38, 40, 42; geochemical soil survey, 233 samples, 7.5 line-miles.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 89.

SHUSWAP (Fig. A, No. 19)

LOCATION: Lat. 51° 28' Long. 118° 50' (82M/7W)
KAMLOOPS M.D. Eight miles north-northeast of the head of Seymour Arm, extending from Blais Creek up the northwest slope of Mount Grace, between 4,000 and 6,300 feet elevation.

CLAIMS: SHUSWAP 1 to 30, GN 11 and 13.

OWNER: GREAT NORTHERN PETROLEUMS & MINES LTD., 1110, One Bentall Centre, 505 Burrard Street, Vancouver.

DESCRIPTION: The property is underlain by rocks of the Shuswap Complex consisting of interbedded quartz-biotite-feldspar schist and paragneiss in the east and leucocratic granitic gneiss in the west.

WORK DONE: Airborne magnetometer and VLF EM survey covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 318; Assessment Reports 486 (ZAN), 4367.

HAIL, GOOF, SUE (82M/7, 9) (Fig. A, No. 97)

LOCATION: Lat. 51° 32' Long. 119° 49' (82M/12W, 5W)
KAMLOOPS M.D. Five miles southeast of Birch Island, covering the headwaters of Jones, Baker, and Harper Creeks, at approximately 5,300 feet elevation. The MUF claims are 1 mile further south, to the east of Harper Creek.

CLAIMS: HAIL, GOOF, SUE, BETH, HARP, LEO, JUDY, KARINA, BOB, MUF, totalling approximately 340.

OWNERS: QUEBEC CARTIER MINING COMPANY, 1400, 1030 West Georgia Street, Vancouver and NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.

METALS: Copper, zinc, lead.

DESCRIPTION: The property is underlain by a succession of Permian or earlier low-grade metamorphic rocks consisting of fine-grained phyllitic greenschist, fine-grained graphitic marble and impure limestone, dark green phyllite, and fine-grained sericitic quartzite. The Cretaceous

(82M/12W)

Baldy batholith is a short distance south. Chalcopyrite and pyrite, with sparse sphalerite and galena, occur in quartz lenses in schist and as disseminations, small veins, and replacements in schist and phyllite.

WORK DONE: VLF EM survey, 14 line-miles covering Hail claims; surface diamond drilling, four holes totalling 1,771 feet on Hail 6, 11, 12, and 573.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 93.

REXSPAR, SMUGGLER (82M-21, 23, 31, 42, 43) (Fig. A, No. 94)

LOCATION: Lat. 51° 34′ Long. 119° 54′ (82M/12W)
KAMLOOPS M.D. One-half mile south of Birch Island, on the south slope of the North Thompson Valley, stretching from Foghorn Creek to Lute Creek, at approximately 4,000 feet elevation.

CLAIMS: TOP, PA, CS, JAM, ELLA, ACTIVE, RADIO, JANE, RAY, totalling 225 and 40 Crown-granted claims including BLACK DIAMOND, SMUGGLER, SPAR, REX, etc. (Lots 5387 to 5405, 5408 to 5411, 5477 to 5482, 5484 to 5494).

OWNER: Consolidated Rexspar Minerals & Chemicals Limited.

OPERATOR: KERR ADDISON MINES LIMITED, 405, 1112 West Pender Street, Vancouver.

METALS: Uranium, fluorite, molybdenum, celestite, lead, rare earths.

DESCRIPTION: Uranium minerals and fluorite occur as hydrothermal replacement deposits in tuffaceous trachyte.

WORK DONE: Surface diamond drilling, six holes totalling 2,020 feet on Lots 5395, 5399, 5408, 5481, and 5486.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 92.

LUCKY, CEDAR, RS (Fig. A, No. 20)

LOCATION: Lat. 51° 36′ Long. 120° 00′ (82M/12W; 92P/9E)
KAMLOOPS M.D. Two miles northwest of the Birch Island Post Office, extending south from the Thompson River and lying astride Hascheak Creek.

CLAIMS: LUCKY 1 to 28, CEDAR 1 to 16, RS 1 to 16.

OWNER: CEDAR CITY MINES LTD., 427, 470 Granville Street, Vancouver.

WORK DONE: Linecutting covering Cedar 1-16 and Lucky 19-24.

REFERENCE: Assessment Report 4368.

BOULDER (82M-123) (Fig. A. No. 95)

LOCATION: Lat. 51° 50′ Long. 119° 42′ (82M/13E)
KAMLOOPS M.D. Nineteen miles north-northeast of Birch Island, 2.5 miles due north of Silence Lake, on Maxwell Creek, between elevations of 3,600 and 4,500 feet.

CLAIMS: BOULDER 1 to 32.

OWNER: Union Carbide Exploration Corporation.

OPERATOR: UNION CARBIDE CANADA MINING LTD., 601, 1112 West Pender

Street, Vancouver V6E 2S1.

METAL: Tungsten.

DESCRIPTION: Several pendants of quartz-biotite schist, marble, quartzite, and coarse, siliceous garnet-idocrase skarn, tremolite skarn, and banded diopside skarn are present in quartz monzonite, granodiorite, and minor pegmatite acid intrusive rocks. Medium-sized (1 to 5-millimetre) crystals of scheelite occur in the skarn, usually in the garnet-idocrase variety.

WORK DONE: Surface geological mapping, 1 inch equals 50 feet covering Boulder 1-12 and 29-32 and 1 inch equals 50 feet covering Boulder 1, 11, 21, 23, and 25; geochemical soil survey, 450 samples, 16 line-miles covering Boulder 1-12, 13, 15, 17, 19, 21, 23, 25, 27, and 29-32; surface diamond drilling, three holes totalling 1,433 feet on Boulder 1; surface workings mapped; linecutting, 20,000 feet on Boulder 1, 5-11, 13, 23-25, and 27; trenching, 5,200 feet.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 94.

IT, TO (RUDDOCK CREEK) (82M-82, 83, 84) (Fig. A, No. 96)

LOCATION: Lat. 51° 46′ Long. 118° 54′ (82M/15W)
KAMLOOPS and REVELSTOKE M.D. Thirty-six and one-half miles due north of the settlement of Seymour Arm, on the western slope of Golden Horne Peak, between Oliver Creek and the head of Ruddock Creek, at approximately 7,000 feet elevation.

CLAIMS: IT 1 to 16, 19 to 24, 27 to 30, 33 to 44, 59, 61, 83 to 85, TO 9 to 14, IN 2, 4, 6 to 19.

OWNER: Falconbridge Nickel Mines Limited.

OPERATOR: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METALS: Zinc, lead.

DESCRIPTION: The property comprises highly metamorphosed calcareous and non-calcareous schists and gneisses. Mineralization includes sphalerite and minor galena, pyrrhotite, and fluorite.

WORK DONE: Airborne magnetometer and EM survey, 87 line-miles covering In 13, 15, 17, 19, It 5, 7-16, 28-30, 39, 41, 42, 59, 61, 83-85, and To 9-14.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1963, pp. 86-88; Assessment Report 4567.

GOLDEN 82N

SAPHIRE (82N-42) (Fig. A, No. 98)

LOCATION: Lat. 51° 22′ Long. 117° 59′ (82N/5W)
REVELSTOKE M.D. Forty-three and one-half miles west-northwest of Golden, one-quarter mile north of Downie Lake, at approximately 7,500 feet elevation.

CLAIMS: SAPHIRE 1 to 4.
OWNER: John R. Grant.
OPERATOR: CALTOR SYNDICATE, 1011, 2200 Yonge Street, Toronto, Ont.
METALS: Lead, zinc, silver.
DESCRIPTION: The claims are underlain by limestone of the Badshot Formation.
WORK DONE: Surface geological mapping, 1 inch equals 100 feet covering Saphire 1-4; X-ray diamond drilling, three holes totalling 130 feet on Saphire 2.

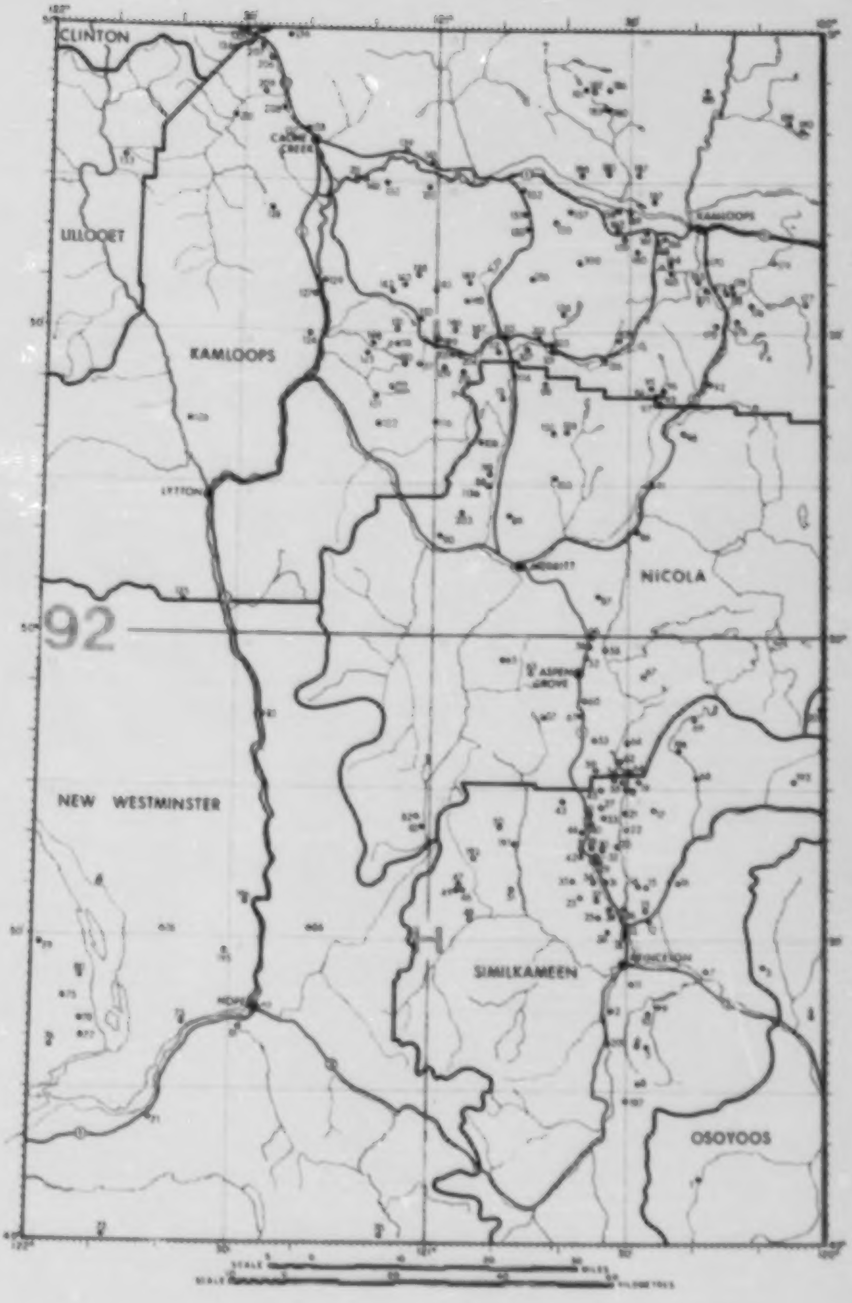

CLINTON
CACHE CREEK
LILLOOET
KAMLOOPS
KAMLOOPS
LYTTON
NICOLA
MERRITT
92
ASPEN GROVE
NEW WESTMINSTER
SIMILKAMEEN
PRINCETON
HOPE
OSOYOOS
SCALE
MILES
SCALE
KILOMETRES

Figure 8. Index map of properties in NTS Grid Division 92H and 92I.

KEY TO PROPERTIES ON INDEX MAP, FIGURE B.

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2. BEN, PIK, page 133.
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4. NICKEL PLATE, page 136.
5. TAS, TAT, page 133.
6. AZURITE, page 134.
7. GH, K, L, page 136.
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10. E, page 134.
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15. HO, page 138.
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17. STAR, page 139.
18. SHAMROCK, NELLIE, page 148.
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20. AXE, page 142.
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22. EJ (VARGAS), page 139.
23. LP, LB, page 140.
24. HAL, page 140.
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30. FAN (BRONSON), page 143.
31. NU (BUTTERWORTH), page 144.
32. JE, HI, page 144.
33. ANITA (BUTTERWORTH), page 144.
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35. MIC, page 145.
36. ANN, page 145.
37. X, Y, page 145.
38. EG, page 146.
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46. LOG, page 149.
47. IRA, page 150.
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59. JAY, FEB, page 156.
60. MIX, page 157.
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91. JANETTE, page 190.
92. NAP, page 191.
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94. ULLA, page 191.
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99. POM POM, page 184.
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150. BLB, page 204.
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154. CON, page 200.
155. MM, page 202.
156. GUT, CARM, page 203.
157. PAT, page 203.
158. RPM, page 202.
159. AFTON, page 201.
160. RAINBOW, page 197.
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163. IM, page 196.
164. AJAX, WHEAL TAMAR, MONTE CARLO, page 197.
165. PAM, BUDA, page 196.
166. PYTHON, COPPER HEAD, page 198.
167. HILLTOP, page 200.
168. GIBBI, page 198.
169. JR, page 199.
170. KENCO, page 197.
171. JD, page 195.
172. JEAN, page 195.
173. MB, SUGI, page 195.
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179. MOT, page 194.
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184. DV, page 216.
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210. R, page 211.
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PRINCETON – KAMLOOPS
(NTS Division 92H and 92I Figure B)

HOPE 92H

ASH, NOLA (92H/SE-94) (Fig. B, No. 1)

LOCATION: Lat. 49° 07′ Long. 120° 19′ (92H/1W)
OSOYOOS M.D. Twenty miles southeast of Princeton between McBride and Cat Creeks, tributaries of the Ashnola River, between elevations of 4,000 and 6,000 feet.

CLAIMS: ASH 2, 4, 6, 8, 10, 12, NOLA 1 to 28, 35 to 44, MAX 1 to 4, CAT 1 to 6, CAR 9, 15, 28, 30, 33, 34, CAT 1 and 2 Fractions, JAM 1 to 47, GC 1 to 6, McBRIDE 1 and 2 Fractions, Q 1 to 25, 30 to 33, 35, 37, 39 to 42, 47, 48.

OWNER: Prism Resources Ltd.

OPERATOR: CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.

METALS: Copper, molybdenum.

DESCRIPTION: A sequence of acid volcanic rocks of probable Kingsvale age is intruded by quartz porphyry and by a plug of biotite quartz monzonite. Fracturing and pyritization are strong and extensive. Quartz vein stockwork and (or) pervasive silicification are locally strong. Sericitization and kaolinization are also present. Mineralization consists of abundant and widespread pyrite with minor chalcopyrite, molybdenite, and possibly chalcocite. Malachite and ferrimolybdite are alteration products of chalcopyrite and molybdenite. A brief examination of the property indicated that fracturing and wallrock alteration crudely conform to a circular pattern centred on a small body of quartz monzonite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; surface diamond drilling, two holes totalling 828 feet on McBride 1 Fraction and Ash 6.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1968, pp. 219, 220; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 99.

LARK (Fig. B, No. 197)

LOCATION: Lat. 49° 14′ Long. 120° 30′ (92H/1W, 2E)
SIMILKAMEEN M.D. Four miles south of Copper Mountain, 1.5 miles east of the Similkameen River, between 3,500 and 5,000 feet elevation.

CLAIMS: LARK 1 to 20, 25 to 65.

OWNER: TAMPICO DEVELOPMENTS LTD., 615, 543 Granville Street, Vancouver.

WORK DONE: Linecutting, 31 miles of grid; geochemical soil survey, 803 samples taken at 200 by 800-foot grid spacing.

REFERENCE: Assessment Report 4866.

SUNSET (SILENT FRIEND) (92H/SW-29) (Fig. B, No. 70)

LOCATION: Lat. 49° 01' Long. 121° 08' (92H/3E)
NEW WESTMINSTER M.D. Twelve and one-half miles due east of the southern end of Chilliwack Lake, on Galene Creek, at approximately 5,000 feet elevation.

CLAIMS: ORE 1 to 54, ROSS 1 and 2.

OWNERS: Fury Explorations Ltd. and Brent Olheiser.

OPERATOR: FURY EXPLORATIONS LTD., 433, 355 Burrard Street, Vancouver.

METALS: Zinc, copper, lead, silver.

DESCRIPTION: In the northeast part of the claim area Hozameen andesite, greywacke, and limestone have been intruded by a large stock of very coarse-grained granodiorite. Near the contact, on Ore 1 and 2, a limestone bed has been altered to magnetite, hematite, and pyrite skarn with sphalerite, less chalcopyrite, and minor galena.

WORK DONE: 1972 – surface geological mapping, 1 inch equals 500 feet; X-ray diamond drilling; reconnaissance geochemical soil survey and 1973 – reconnaissance geochemical soil survey and surface geological mapping, covering Ore 1-49 and Ross 1 and 2.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1938, p. F14; 1967, p. 66 (HOPE); Assessment Reports 1195, 4719.

MT. CHEAM NO. 2 (92H/SW-65) (Fig. B, No. 71)

LOCATION: Lat. 49° 12' Long. 121° 42' (92H/4E)
NEW WESTMINSTER M.D. Two and one-half miles east-northeast of Bridal Falls village, on the north slope of Cheam Peak, at approximately 3,000 feet elevation.

CLAIMS: LUCKY 1 to 8, A 5 to 10.

OWNERS: RON McBEAN, VICTOR N. BRIGGS, JACK WHITE, and W. E. HARVEY, 3450 West 35th Avenue, Vancouver.

METAL: Copper.

DESCRIPTION: Argillite, slate, sandstone, and limestone have been intruded by granite. Iron, copper, and zinc mineralization noted at a limestone-granite contact did not prevail to depth with blasting.

WORK DONE: Trenching, 432 feet on Lucky 8; surface geological mapping covering A 5-10; trenching, 300 cubic feet and stripping, 600 cubic feet on A 7.

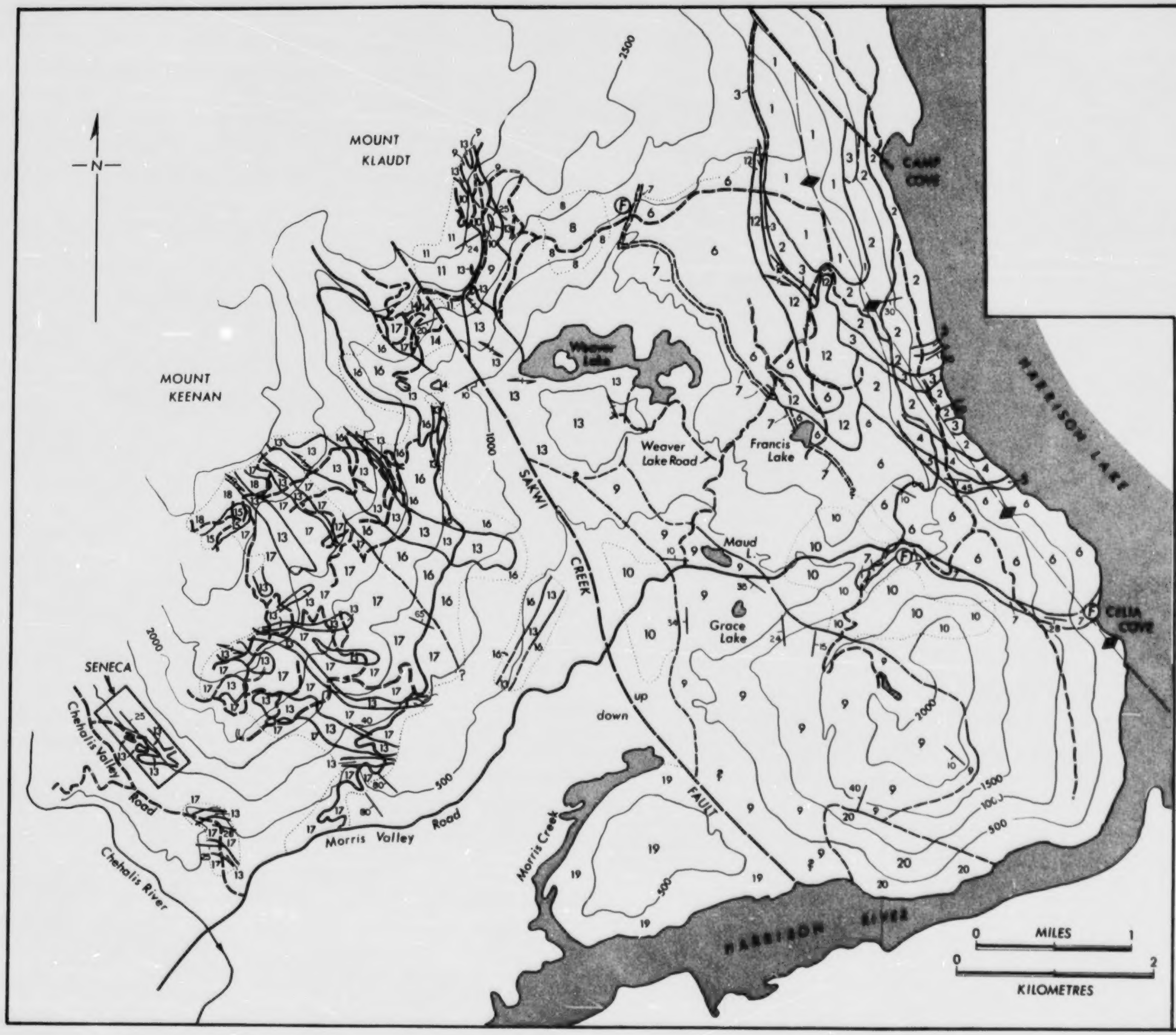
REFERENCE: *Minister of Mines, B.C.*, Ann. Rept., 1966, p. 61.

TAN (92H/SW-85) (Fig. B, No. 72)

LOCATION: Lat. 49° 01' Long. 121° 48' (92H/4W)
NEW WESTMINSTER M.D. Ten miles southeast of Vedder Crossing, on Tamihi Creek, at approximately 2,100 feet elevation.

CLAIMS: TAN 1 to 14, 17 to 50, SO 1 to 6, 8, SO 7 and 9 Fractions, AX 1 to 4.

OWNERS: W. Bell, M. McLaren, G. Stapely.


N
MOUNT KLAUDT
MOUNT KEENAN
SENECA
Chehalis Valley Road
Chehalis River
Morris Valley Road
Morris Creek
SAKWI CREEK FAULT
Weaver Lake
Weaver Lake Road
Francis Lake
Maud L.
Grace Lake
CAMP COVE
HARRISON LAKE
CELIA COVE
HARRISON RIVER
up
down
2500
2000
1500
1000
500
0 MILES 1
0 KILOMETRES 2

GEOLOGY OF AN AREA SOUTHWEST OF HARRISON LAKE

Figure 12

LEGEND

MIOCENE

20 INTRUSIVE HORNBLENDE GRANODIORITE

MIDDLE JURASSIC ?

(A) WEST OF SAKWI CREEK FAULT

ECHO ISLAND FORMATION

19 INTERBEDDED SANDSTONE AND SHALE

PART OF HARRISON LAKE FORMATION

18 ANDESITE BRECCIA WITH RHYOLITE FRAGMENTS
17 LAUMONTITE-BEARING DACITE TUFFS
16 LAUMONTITE-BEARING ANDESITE BRECCIA
15 SANDSTONE
14 SANDSTONE, SHALES, AND MOTTLED TUFFS

13 INTRUSIVE FELDSPAR PORPHYRY

(B) EAST OF SAKWI CREEK FAULT

PART OF HARRISON LAKE FORMATION

11 BRECCIAS AND ASH FALL TUFFS
10 PILLOWED ANDESITES
9 WATER-LAIN TUFF WITH CONVOLUTE LAMINAE
8 SILICIFIED ZONE
7 FOSSILIFEROUS SHALE
6 DARK GREEN TUFF WITH GRADED BEDDING AND ACCRETIONARY LAPILLI

12 RHYOLITE
13 INTRUSIVE FELDSPAR PORPHYRY

LOWER JURASSIC (TOARCIAN)

CAMP COVE FORMATION

5 BLACK ARGILLITE
4, 3, 2 —CGL —CHERT INTERBEDDED GREYWACKES AND SHALES, WITH CHERT BEDS AND CONGLOMERATE
1 POLYMICTIC CONGLOMERATE

SYMBOLS

BEDDING
FLOW-BANDING
CONTACT: DEFINED, ASSUMED
FAULT
ROAD: TWO WHEEL, FOUR WHEEL
CONTOUR, 500' INTERVAL 500
FOSSIL LOCATIONS Ⓕ
PROJECTED SURFACE TRACE OF TOP AND BASE OF FOSSILIFEROUS SHALE BED
AXIAL-PLANE TRACE CAMP COVE ANTICLINE

(92H/5W)

OPERATOR: COMINCO LTD., 2100, 200 Granville Square, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: Chalcopyrite, sphalerite, and pyrite mineralization was observed at an intrusive contact with Chilliwack Group volcanic rocks.

WORK DONE: IP survey, 2.9 line-miles covering Tan 39, 40, 42, and 49; road construction, 0.7 mile on Tan 39.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 102.

HARRISON, LUCKY JIM (92H/SW-13) (Fig. B, No. 76)

By D. E. Pearson

LOCATION: Lat. 49° 19.0' Long. 121° 56.5' (92H/5W)
NEW WESTMINSTER M.D. Eight miles west of Harrison Hot Springs, on Chehalis River, at approximately 1,000 feet elevation.

CLAIMS: HARRISON 1 to 32, LUCKY JIM, CHEHALIS 8, BONANZA 1 and 2, BONANZA 1 Fraction, DOROTHY 1 to 3, JOY 1 to 44, JOY 1 Fraction, ZIP 1 to 16, 20 POT, LH 1 to 20, LYN 1 to 4, HILL 1 to 3, C 1 to 11, MZ 1 to 8, SNO 14, 16, H 3, HW 1 to 4.

OPERATOR: COMINCO LTD., 2100, 200 Granville Square, Vancouver.

METALS: Copper, zinc, silver, lead, gold.

DESCRIPTION:

The results of a four-week regional mapping project in the southern part of the Harrison Lake Formation are contained in *Geology, Exploration, and Mining in British Columbia, 1972* (Thompson, GEM, 1972, pp. 102-114).

In June and July, 1973, the writer commenced detailed geological mapping on the west side of Harrison Lake. The purpose of this mapping programme was to produce a geological map at a scale of 1 inch equals 200 feet of the Harrison-Lucky Jim property (better known as Seneca), together with a mapped section through the Harrison Lake Formation at a scale of 5 inches equals 1 mile. The following observations establish some hitherto unknown facts about the area.

REGIONAL GEOLOGY: The regional distribution of volcanic and sedimentary rocks west of Harrison Lake is controlled by the Camp Cove anticline and the Sakwi Creek fault (Fig. 12). The presence of this fault precludes the identification in this area of a complete stratigraphic section through the Harrison Lake Formation. West of Sakwi Creek fault lies a volcanic terrane in which stratigraphic relationships are not easily established, whereas to the east, a north-northwesterly strike predominates.

The oldest rocks in the area are poorly sorted polymictic conglomerates that form the core of the Camp Cove anticline. These in turn are overlain by graded greywackes and interbedded shales that contain several discontinuous black chert beds. In new roadcuts at the south end of the anticline, above the aforementioned member, a very coarse, poorly bedded exotic conglomerate, possibly a fluxoturbidite,* separates the greywackes from an overlying black argillite. Beds of this latter rock type are the highest in the Camp Cove Formation as defined by Crickmay (1925). The presence of *Dactylioceras* (Brookfield, 1973 and pers. comm.) in the greywacke member indicates that some, if not all, of the Camp Cove Formation is of Toarcian (Lower Jurassic) age.

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*Fluxoturbidites are coarse-grained, thickly bedded, poorly graded, and often channeled marine clastic rocks, that occur in turbidite sequences and frequently are indistinguishable from proximal turbidites.

A fault at the north end of the Camp Cove anticline brings andesite and andesite breccia into contact with the rocks of the Camp Cove Formation. However, dip measurements on the chert bed (Fig. 12) and its trace in map view strongly suggest that the fault has bisected the hinge of a fold closing to the north. This implies that the Camp Cove anticline is an eroded plunge culmination, and confirms Crickmay's earlier suggestion that it is 'domed up.'

The basal member of the overlying Harrison Lake Formation is taken as the thick (>2,000 feet) structurally monotonous dark green tuff, well exposed in the roadcuts in the hinge area of the Camp Cove anticline, and along the Harrison Lake shoreline. Rare graded bedding, and one accretionary lapilli-bearing outcrop attest to the subaqueous origins of this deposit.

On the westerly dipping limb of the Camp Cove anticline a fluxion-banded, spherulite-bearing intrusive rhyolite obscures the contact between cherts of the Camp Cove Formation and the basal tuff of the Harrison Lake Formation. At the south end of this rhyolite dyke, a western extension strikes toward Weaver Lake, clearly intrusive to the attitude of the basal tuff member.

Fossiliferous, dark blue-grey shales, that are well exposed at Celia Cove in the hinge of the Camp Cove anticline, overlie the basal tuffs of the Harrison Lake Formation. Faunas from these shale beds at the 700-foot level along the Morris Valley road apparently indicate a Middle Bajocian (Middle Jurassic) age (Frebold, *in* Monger, 1970).

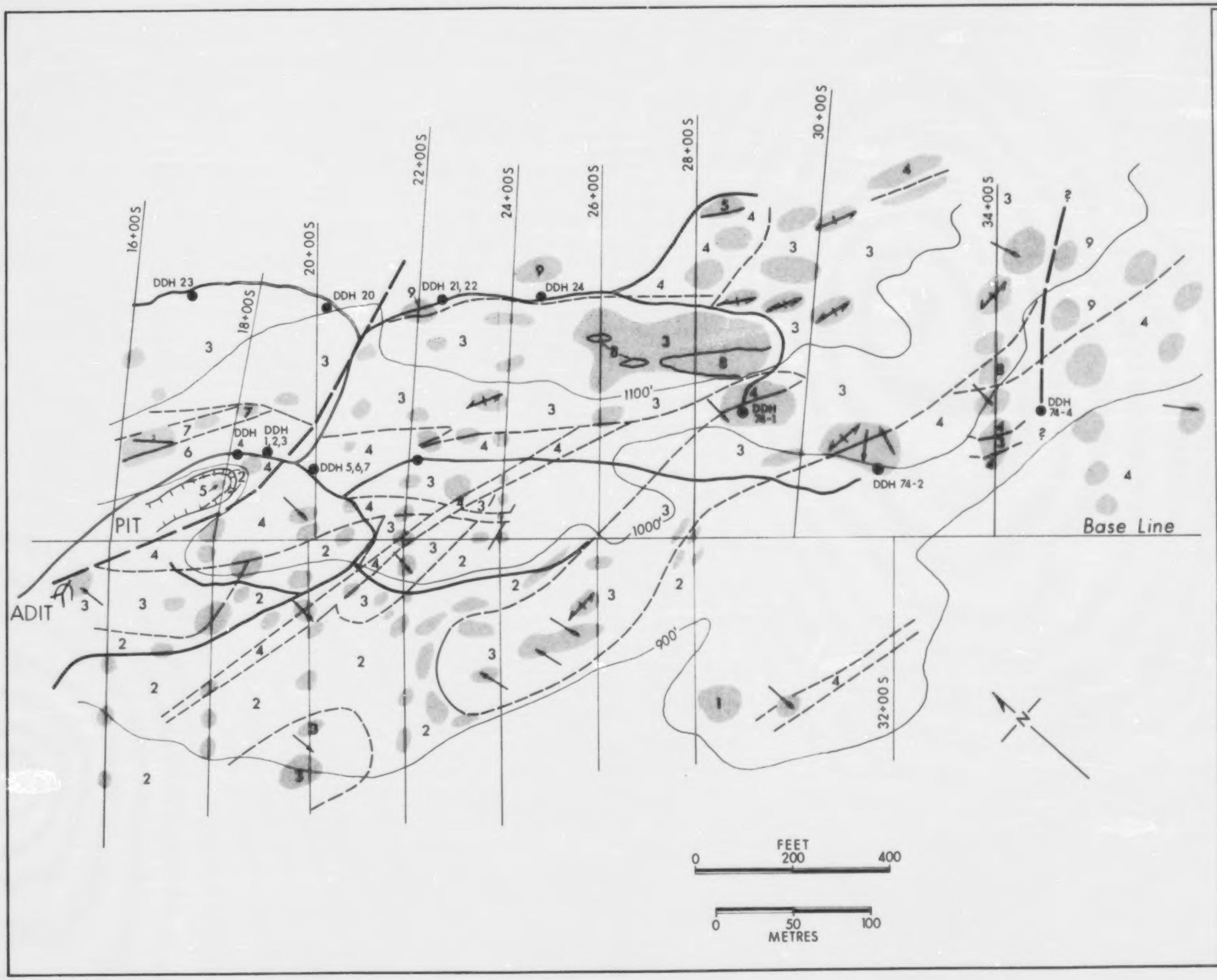
On the road from Camp Cove up to Mount Klaudt, the basal tuff of the Harrison Lake Formation is succeeded by a thin conglomerate bed, which in turn is overlain by a thin (>10-foot) fossiliferous shale, that has yielded a varied fauna including lamellibranchs (trigonids), brachiopods (rhynchonellids and terebratulids), and corals.

Details of the stratigraphy between the mouth of Harrison River and Celia Cove have not been worked out satisfactorily, although the presence of a carbonate bed, a rhyolite flow, and a coarse breccia has been observed.

Along Morris Valley road, the fossiliferous shale bed is overlain by a thick sequence of andesites and andesitic breccias. Above the fossiliferous shale exposed along the Mount Klaudt road, original textures in the rocks have been obscured by silicification that is unrelated to the granodiorite stock exposed on the north side of the mountain. Thin sphalerite - chalcopyrite - pyrite stringers and one limonite-stained, sphalerite-bearing outcrop appear to be the only surface mineralization at this locality.

West of this belt of variable lithology, is a thick waterlain tuff that is characterized by load-casts and common convolute laminae. On Mount Klaudt this tuff is succeeded upward by a conglomerate bed with a channeled base that is overlain by pillowed andesites and pillow breccias. The waterlain tuff with convolute laminations is 500 feet thick on the east side of Mount Klaudt, and thins to about 100 feet to the west of Weaver Lake, where it is cut out by an intrusive, fluxion-banded rhyodacite. The waterlain tuff member crosses the Morris Valley road by the junction with Weaver Lake road, and obtains its maximum thickness (>600 feet) in the cliffs above Grace Lake.

On Mount Klaudt the pillow breccias are overlain by bedded ash fall tuffs and breccias.


16+00S
18+00S
20+00S
22+00S
24+00S
26+00S
28+00S
30+00S
32+00S
34+00S
DDH 23
DDH 20
DDH 21, 22
DDH 24
DDH 4
DDH 1,2,3
DDH 5,6,7
DDH 74-1
DDH 74-2
DDH 74-4
PIT
ADIT
Base Line
1100'
1000'
900'
N
FEET
0
200
400
0
50
100
METRES

GEOLOGY OF SENECA AREA

Base Map from Company Plans

Figure 13

Legend

1	RHYOLITE
2	VOLCANIC BRECCIA
3	RHYODACITE
4	ANDESITE
5	BLACK ARGILLITE
6	VOLCANIC BRECCIA WITH WISPY ANDESITE CLASTS
7	CONVOLUTE LAMINATED TUFF
8	HORNFELSED TUFF
9	DACITE

Symbols

AREA OF OUTCROP

CONTACT: DEFINED, ASSUMED

DIAMOND-DRILL HOLE COLLAR — DDH 4

PLUNGE DIRECTION OF SHALLOW COLUMNAR JOINTS

FLUXION BANDING

DIP OF TUFFS

ROAD

In contrast to the gently westerly dipping rocks exposed east of Sakwi Creek fault, the volcanic terrane to the west shows more variation in direction and amount of dip. Interbedded shale and sandstone at the 1,400-foot level in Sakwi Creek is subhorizontal, as is the sequence of sandstones exposed at the 3,200-foot level on Mount Keenan, and the erroneous conclusion could be drawn that the sequence is essentially flat lying. However, the contact between laumontite-bearing andesitic breccias and laumontite and other zeolite-bearing dacite tuffs on the east side of Mount Keenan is evidently very steep. Moreover, it cannot be demonstrated that this is a faulted contact.

From the junction with Morris Valley road to the 1,000-foot level on the Hemlock Valley road, the mottled, laumontite-bearing dacite tuffs possess a banding that (with the exception of the summit) is unfortunately absent over most of the rest of the mountain. This is not a cleavage or a tectonic foliation but an original sedimentary feature clearly visible where the tuffs are seen in conformable contact with undoubted, but rare, sedimentary wedges, as for example, at the 900-foot level on Hemlock Valley road. Variation in the attitude of this surface, including steep easterly, steep westerly, and even vertical dips (as for example at the 500-foot level on the Hemlock Valley road), implies the presence of folding on northwesterly trending axes. No such folding has yet been demonstrated west of the Sakwi Creek fault, but it is the writer's opinion that this is due not so much to their absence, as to the difficulty in both finding a marker bed to define them and the absence of bedding in the dacite tuffs at intermediate levels on the mountain.

An alternative explanation, involving the juxtaposition of rotated fault-separated blocks similarly cannot yet be demonstrated.

The outlines of several feldspar porphyry bodies on the east side of Mount Keenan have been mapped in detail. In each case columnar jointing plunges shallowly, and where found, fluxion banding dips steeply, generally subparallel to the margins of the bodies. The three feldspar porphyries which go above the 3,000-foot level on Mount Keenan are dykes. They all have very steeply dipping margins, that cross both the banding in the laumontite-bearing dacite tuffs at about the 3,200-foot level and the bedding in the subhorizontal sandstones. On the basis of similar shallowly plunging columnar jointing and steeply dipping fluxion banding, the other feldspar porphyries above Hemlock Valley road are considered to be dykes. These data are at variance with earlier views expressed on the make-up of the Harrison Lake Formation volcanic rocks, which have tended to stress the dominance of porphyritic flows (Crickmay, 1925; Thompson, GEM, 1972).

GEOLOGICAL SETTING OF THE SENECA DEPOSIT: The geology of the area immediately adjacent to the open pit at Seneca is shown on Figure 13.

Southwest of the baseline the most abundant rock type is a volcanic breccia characterized by coarse and fine angular volcanic pyroclasts of andesitic to rhyolitic character.

Two columnar jointed dyke sets transect the aforementioned pyroclastic deposit southwest of the open pit. The older set, which are comprised of rhyodacites, generally possess a vertical fluxion banding in addition to the shallowly plunging cooling joints. A younger andesitic dyke set possesses only the shallowly plunging columnar jointing.

A small area of black argillite exposed in the floor of the pit is overlain by a pyroclastic breccia that forms the walls of the pit. Immediately beyond the pit headwall there are outcrops of andesite and these are presumed to be intrusive.

To the northeast above the pit, a distinctive volcanic breccia with wispy andesite clasts is overlain by about 15 feet of well-bedded convolute laminated tuff. This member, which dips shallowly to the northeast terminates against an intrusive rhyodacite that extends for at least 1,600 feet across the property in a southeasterly direction forming the cliffs at the 1,100-foot level. Vertical contacts between this rhyodacite and a 1-inch thick hornfelsed tuff is exposed between andesite and rhyodacite dykes east of the baseline on picket lines 26 + 00S and 27 + 00S.

Upon casual inspection it might be erroneously concluded that the convolute laminated tuff and the two hornfelsed tuffs were separate sections of the same tuff member. However, diamond-drill hole 73-2 east of the baseline between picket lines 30 + 00S and 34 + 00S, which is on strike with the convolute laminated tuffs above the pit, has demonstrated that the tuffs above the wispy andesite-bearing breccia occur at about the 950-foot level. In other words, between the drill hole location and the tuffs above the pit, there is a fault with a throw of about 100 feet.

The rocks of the pit area are separated from the more extensive outcrops of pyroclastic breccia to the southwest by a fault, the trace of which passes between the mouth of the old adit and the pit, from whence it is considered to follow the major break in slope east of the pit. It is this fault that is considered to have a downthrow to the south of about 100 feet. Company maps show the trace of this fault along a small break in slope from the pit southeastward, subparallel to the baseline.

No movement is apparent on the dyke sets and, at the present state of knowledge, the presence of a fault with this trend cannot be confirmed.

Thus, mapping to date has demonstrated the previously unrealized presence of numerous unmineralized dykes, that tend to block out potential areas of ore location.

In 1961, 287 tons of ore was shipped from Seneca to Britannia Beach for milling. Metal content of the ore was: 17 ounces gold, 959 ounces silver, 7,118 pounds copper, and 40,657 pounds zinc. Subsequent exploration has failed to locate more ore.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and geochemical soil survey, approximately 300 samples covering all claims; surface diamond drilling, five holes totalling 1,292 feet on Lucky Jim, C 8, and Harrison 1; diamond-drill holes 73-25 to 73-29 surveyed; road construction, approximately 1 mile on Lucky Jim, C 8, and Harrison 1.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 265; 1972, pp. 102-114; Brookfield, M. E., 1973, *Can. Jour. Earth Sci.*, Vol. 10, pp. 1688-1692; Crickmay, C. H., 1925, The geology and paleontology of the Harrison Lake District, B.C., together with a general review of the Jurassic faunas and stratigraphy of western North America, unpub. Ph.D. thesis, *Stanford University*, Stanford, California; *Minister of Mines, B.C.*, Ann. Rept., 1962, p. 93; Monger, J.W.H., 1970, Hope Map-area, West Half, British Columbia, *Geol. Surv., Canada*, Paper 69-47, 75 pp.; Assessment Reports 2833, 2998, 3440, 3441, 3490, 3560.

WR (Fig. B, No. 77)

LOCATION: Lat. 49° 20′ Long. 121° 52′ (92H/5W)
NEW WESTMINSTER M.D. Four and one-half miles northwest of Harrison Hot Springs, 1 mile south of Weaver Lake, at approximately 500 feet elevation.

CLAIMS: WR 1 to 8, 10 to 22, 24, 25, including fractions.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 5, 465 Victoria Street, Kamloops.

DESCRIPTION: The property is underlain mainly by Middle Jurassic volcanic rocks of the Harrison Lake Formation. Alteration and pyrite mineralization increase northeastward across the claim group.

WORK DONE: 1972 and 1973 – linecutting, 47 miles of grid; geochemical rock chip survey, 66 samples collected and analysed; surface geological mapping, 1 inch equals 400 feet covering all claims.

REFERENCE: Assessment Report 4375.

LUV, STONEY (92H/SW-69) (Fig. B, No. 78)

LOCATION: Lat. 49° 22′ Long. 121° 53′ (92H/5W)
NEW WESTMINSTER M.D. The property is centred 6 miles northwest of Harrison Hot Springs, between 500 and 2,500 feet elevation.

CLAIMS: LUV 1 to 52, STONEY 1 to 28, CS 10, 15 to 18, DS 1 to 8, LM 1 to 8, OATS 1 to 6, 9, 10, 12, OATS 11 Fraction, RYE 1 to 11, 13, 15, TRIO 1 to 8.

OWNER: AARON MINING LTD., 120, 890 West Pender Street, Vancouver.

METALS: Copper, zinc.

WORK DONE: Linecutting, 9 miles of grid established covering Luv 1, 3, 9, 11, 27-34, 36, 38, 40, 42.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 247; Assessment Report 4470.

SKU (92H/SW-86) (Fig. B, No. 75)

LOCATION: Lat. 49° 23′ Long. 121° 55′ (92H/5W)
NEW WESTMINSTER M.D. Four miles west of Harrison Lake, at the head of Brett and Sakwi Creeks, at approximately 3,500 feet elevation.

CLAIMS: SKU 3 to 10.

OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver V7P 2R4.

METAL: Copper.

DESCRIPTION: A Tertiary (?) granitic pluton has intruded volcanic rocks of the Middle Jurassic Harrison Lake Formation. Mineralization comprises pyrite in an alteration halo around the granitic pluton.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and geochemical rock chip and soil survey, 83 samples covering Sku 3-10.

SF (92H/SW-87) (Fig. B, No. 80)

LOCATION: Lat. 49° 25′ Long. 121° 52′ (92H/5W)
NEW WESTMINSTER M.D. Two miles west of Harrison Lake, between Simms and Cartmell Creeks, at approximately 2,000 feet elevation.

CLAIMS: SF 1 to 16.

OWNER: T. J. DONALDSON, 101, 535 Thurlow Street, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: The property is underlain by quartz porphyry lava and altered tuff of the Harrison Lake Formation. Chalcopyrite, associated with sphalerite and pyrite, was noted in veinlets in altered tuffs in the central portion of the claims.

WORK DONE: Linecutting, 2.5 miles of grid; geochemical survey, 166 soil and 23 rock samples taken at 100 by 400-foot grid spacing covering SF 12 and 14-16.

REFERENCE: Assessment Report 4858.

KU (Fig. B, No. 79)

LOCATION: Lat. 49° 29′ Long. 121° 59′ (92H/5W)
NEW WESTMINSTER M.D. Two miles northeast of the north end of Chehalis Lake, between 2,500 and 4,500 feet elevation.

CLAIMS: KU 1 to 30.

OWNER: Fred Carney.

OPERATOR: CHEVRON STANDARD LIMITED, 833, 355 Burrard Street, Vancouver.

DESCRIPTION: The claims are underlain by Jurassic volcanic and sedimentary rocks of the Harrison Lake and Echo Island Formations. The volcanic rocks are mainly andesite to rhyolite tuffs, with lesser amounts of coarse pyroclastics, with andesite flows in the lower part of the sequence. Marine tuffs and argillite are intercalated in the upper part. The rocks are moderately folded about east-trending axes. Pyrite and pyrrhotite are disseminated through most of the rocks and are somewhat concentrated in rhyolite tuffs.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet; geochemical soil survey, 658 samples taken at 100 or 200 by 500-foot grid spacing covering most of the claims.

REFERENCE: Assessment Report 4838.

CLOVER LEAF (Fig. B, No. 73)

LOCATION: Lat. 49° 22′ Long. 121° 37′ (92H/5E)
NEW WESTMINSTER M.D. Eight miles west-southwest of Hope, 1 mile above the mouth of Ruby Creek, between 300 and 800 feet elevation.

CLAIMS: CLOVER LEAF 1 to 4, BEN 1, 2, 9 to 11, 13, 32 to 34.

(92H/5E, 6W)

OWNERS: JACK WHITE and W. E. HARVEY, 3450 West 35th Avenue, Vancouver.

METALS: Talc, copper, nickel, silver.

DESCRIPTION: Pyrrhotite, carrying some nickel and copper values, was noted in talc enveloped in a serpentinite shear zone.

WORK DONE: Surface diamond drilling, one hole totalling 50 feet on Ben 9 and one hole totalling 45 feet on Ben 34; trenching, 96 cubic feet on Clover Leaf 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 249.

PRIDE OF EMORY MINE (92H/SW-4) (Fig. B, No. 195) By J. W. Robinson

LOCATION: Lat. 49° 28′ Long. 121° 31′ (92H/5E, 6W)
NEW WESTMINSTER M.D. Eight miles north of Hope, at the head of Stulkawhits (Texas) Creek, which flows eastward into the Fraser River.

CLAIMS: Current production is from the area of the Crown-granted claims LAST CHANCE FR. (Lot 861), OLD CROW (Lot 862), A ZONE (Lot 1397), FAIRVIEW, NICKEL CORE FR., and ST. JULIEN FR. (Lots 1401 to 1403), Former production has come from PRIDE OF EMORY NO. 1 and NO. 2 (Lots 793 and 794), MOLLY (Lot 800), PROGRESS (Lot 801), BLUEBIRD (Lot 811), NICKEL STAR (Lot 812), APEX (Lot 1390), and PRIDE FR. (Lot 1416). In total the property consists of 92 Crown-granted claims, two mineral leases (M-32 and M-33), and 56 unsurveyed claims including PENTAX, TARFU, TD, WINDY, BURN, etc.

OWNER: GIANT MASCOT MINES LIMITED, Box 10010, Pacific Centre, 700 West Georgia Street, Vancouver.

METALS: Nickel, copper (production shown in Table I).

DESCRIPTION: Nickel, copper, and iron sulphide mineralization occurs in vertical or steeply inclined pipe-like orebodies. These bodies occur in and around an irregularly shaped ultramafic stock-like body engulfed in diorite.

WORK DONE:

During the year the Climax No. 1 orebody was fully developed and placed in production on the 3050 level and between the 2600 and 3050 levels. The Chinaman orebody, which was developed and placed into production between the 2600 and 3050 levels, was drilled off ready for production above the 3275 (Chinaman) level.

Development of the 4300 orebody for production below the 3250 level was partially completed during the year and is continuing. The 3250 level pillar of the 1600 orebody was blasted and some production was obtained from this source. Production from the 4600 orebody was discontinued except for production from the 2750 scraper drift.

Diamond drilling to the west of the Brunswick-Pride of Emory area revealed the presence of several zones of mineralization, subsequently designated the 6800 zone. Crosscuts were driven toward the zone on the 3250 and 2950 levels, and fill-in diamond drilling commenced. The 6800 zone of mineralization lies about 800 feet west of earlier workings.

The mining method used is longhole stoping. The ore is blasted in longhole stopes by vertical or horizontal fans of 2-inch diameter blastholes. Ore is extracted from the stopes through slusher drift, bulldoze chamber, or mucking machine drawpoints as individual circumstances dictate. On the 3050 level the ore is extracted through drawpoints using Eimco 915 longhole drill units to muck and tram the ore to the 84-inch-diameter bored ore-pass raise.

The ore is trammed to the concentrator on the 2600 main haulage level with direct current trolley locomotives and trains of 100-cubic-foot Granby cars.

In March, the concentrator was changed from bulk to differential flotation.

During the summer, an extensive programme of surface geological mapping, soil sampling, and rock sampling was carried out to confirm and refine previous knowledge of the host ultramafic rock complex. Extensive ground magnetometer and IP surveys were completed over selected areas of the ultramafic rocks.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 248; 1971, pp. 267-269; 1972, pp. 117, 118.

AUFEAS (92H/SW-36) (Fig. B, No. 81)

LOCATION: Lat. 49° 21′ Long. 121° 29′ (92H/6W)
NEW WESTMINSTER M.D. Three miles southwest of Hope, one-half mile up Wardle Creek from Silverhope Creek, between 750 and 1,500 feet elevation.
CLAIMS: CAM 1 to 5, CAM EXT 1 to 3, RAM 1.
OWNER: CAMROCK MINES LTD., c/o C. Lee, R.R. 2, Skagit Road, Hope.
METALS: Gold, silver, copper, iron, arsenic.
DESCRIPTION: Auriferous arsenopyrite and chalcopyrite have been observed in sheared quartz diorite.
WORK DONE: Trenching, 50 feet and stripping, 50 feet on Cam 2.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 116, 117.

SIMILKAMEEN MINE (INGERBELLE) (92H/SE-4, 5, 6) (Fig. B, No. 201)

By David Smith

LOCATION: Lat. 49° 20′ Long. 120° 33′ (92H/7E)
SIMILKAMEEN M.D. Ten miles south of Princeton, on Highway 3.
CLAIMS: Eighty-eight Crown-granted claims including INGERSOLL BELLE, INVINCIBLE, LELA, and RED BUCK, Mineral Leases M-64, M-96, M-97, M-98, M-99, and 126 recorded claims including AF, RAY, MCB, DEER, NUT, RAD, SER, BETH, OREGON, PEON, MAY, SL, and EM.
OWNER: SIMILKAMEEN MINING COMPANY LIMITED, Box 520, Princeton.
METAL: Copper (production shown on Table I).
DESCRIPTION: Most of the known copper mineralization occurs in altered Nicola Group volcanic breccia near the contact with intrusive rocks of the Lost Horse Complex.
WORK DONE: During the year, approximately 21,219,800 tons was mined including 14,276,971 tons of rock waste, 1,586,000 tons of overburden, and 5,356,829 tons of concentrate.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 385; 1971, p. 270; 1972, p. 120; Bull. 59, 1972, Geology of Copper Mountain.

BEN, PIK (Fig. B, No. 2)

LOCATION: Lat. 49° 23' Long. 120° 32' (92H/7E)
SIMILKAMEEN M.D. Five miles south of Princeton, straddling the Similkameen River.
CLAIMS: Nineteen BEN, PIK 1 to 22, DEC 54 to 56, GAM 17, 18, 23, 51 to 53, WR 1 to 26, BX 1 to 8.
OWNER: BENPEL INDUSTRIES LTD., 200, 535 Howe Street, Vancouver.
WORK DONE: Geochemical soil survey, approximately 825 samples taken at 200 by 400-foot spacing and 29 line-miles of pace and compass grid covering most of the Ben, Pik, BX, and Dec claims.
REFERENCES: Assessment Reports 4528, 4635.

ILSE, SOB (Fig. B, No. 8)

LOCATION: Lat. 49° 16' Long. 120° 28' (92H/8W)
SIMILKAMEEN M.D. Thirteen miles south of Princeton and 4 miles east of the Similkameen River at approximately 5,500 feet elevation.
CLAIMS: ILSE 1 to 12, SOB 1 to 8.
OWNER: AURUS MINING LTD., 312, 510 West Hastings Street, Vancouver V6B 1L8.
WORK DONE: IP survey covering approximately 6 line-miles.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 123; Assessment Report 4376.

TAS, TAT (92H/SE-132) (Fig. B, No. 5)

LOCATION: Lat. 49° 19' Long. 120° 27' (92H/8W)
SIMILKAMEEN M.D. From 6 to 12 miles south-southeast of Princeton, along the west side of Willis Creek at approximately 5,500 feet elevation.
CLAIMS: TAS 5 to 12, 19, 21, 23, 25, 41 to 46, TAT 2, 4, 21, 23, 25 to 32, RB 1 to 84, SHL 1 to 22, 24 to 28, 30, 31.
OWNER: PHELPS DODGE CORPORATION OF CANADA, LIMITED, 404, 1112 West Pender Street, Vancouver V6E 2S1.
METAL: Copper.
DESCRIPTION: Most of the claim group is reported to be underlain by volcanic rocks of the Upper Triassic Nicola Group cut by bodies of the Upper Triassic Copper Mountain Intrusions and by the Lower Cretaceous Verde Creek quartz monzonite.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering TAS, TAT, and RB claims during 1972 and 1973; IP survey, 10 line-miles and magnetometer survey, 19.5 line-miles covering TAS and TAT claims during 1972; geochemical survey, approximately 600 samples at 200-foot intervals over 19.5 line-miles covering the TAS and TAT claims during 1972.

REFERENCES: Assessment Reports 4380, 4526, 4806.

AZURITE (92H/SE-21) (Fig. B, No. 6)

LOCATION: Lat. 49° 20' Long. 120° 28' (92H/8W)
SIMILKAMEEN M.D. Nine miles south of Princeton, on the east side of Copper Mountain.

CLAIMS: CAS 1, 3 to 32, ASP 1 to 3 Fractions. (The claims in part cover the AZURITE, COPPER GLANCE, NO. 54, NO. 55, and NO. 56 lapsed Crown-granted claims.)

OWNER: SHELTER GOLD LTD. (formerly Sinmax Mines Ltd.), 335, 470 Granville Street, Vancouver V6C 1V5.

METAL: Copper.

DESCRIPTION: The showings on the old Azurite and Copper Glance Crown-granted claims are located near the southern contact of the Voigt stock in massive andesite and breccia of the Nicola Group. Mineralization consists of magnetite-epidote veinlets with some chalcopyrite.

WORK DONE: Magnetometer survey at 50 and 25-foot intervals.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 274, 275; Bull. 59, p. 78; Assessment Report 4372.

E (Fig. B, No. 10)

LOCATION: Lat. 49° 22' Long. 120° 27' (92H/8W)
SIMILKAMEEN M.D. Six miles southeast of Princeton, on Little Agate Mountain, 1.5 miles southwest of Lorne Lake, at approximately 3,500 feet elevation.

CLAIMS: E 1 to 12.

OWNER: HOKO EXPLORATION LTD., Box 100084, 700 West Georgia Street, Vancouver.

DESCRIPTION: Coarse-grained, porphyritic granodiorite of the Okanagan batholith, exposed in a few places, has been cut by felsitic dykes. Sparse pyrite is finely disseminated along a fracture in one outcrop.

WORK DONE: Reconnaissance geological survey; 11.2 line-miles of grid and magnetometer survey; geochemical soil survey, 276 samples at 200 by 400-foot grid spacing.

REFERENCE: Assessment Report 4696.

DENISE (92H/SE-133) (Fig. B, No. 9)

LOCATION: Lat. 49° 23' Long. 120° 25' (92H/8W)
SIMILKAMEEN M.D. At the southwest end of Lorne Lake, at approximately 4,000 feet elevation.

CLAIMS: DENISE 1 to 21.

OWNER: GEO-DYNE RESOURCES LTD., 1606, 1055 West Georgia Street, Vancouver.

METAL: Copper.

DESCRIPTION: The property is underlain mainly by Nicola volcanic rocks which have been intruded in the northeast by diorite of the Okanagan batholith. Along part of the contact Nicola andesite has been altered to skarn, which contains veinlets, blebs, and disseminations of chalcopyrite and pyrite.

WORK DONE: Surface geological mapping, 1 inch equals 1,250 feet; geochemical soil survey, approximately 250 samples taken at 250 by 500-foot grid spacing; approximately 20 line-miles of magnetomter and VLF EM survey; airborne magnetic, EM, and radioactivity survey involving 15 runs, 14,000 feet in length and 500 feet apart.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 123; Assessment Reports 3903, 4553, 4727.

NOB (92H/SE-123) (Fig. B, No. 11)

LOCATION: Lat. 49° 25' Long. 120° 29' (92H/8W)
SIMILKAMEEN M.D. From 3 to 5 miles south of Princeton, on the Copper Mountain road, at approximately 3,200 feet elevation.

CLAIMS: NOB 1 to 59 (includes a former surveyed claim, Lot 1802s).

OWNER: NEWMONT MINING CORPORATION OF CANADA LIMITED, 1230, 355 Burrard Street, Vancouver V6C 2G8.

METAL: Copper.

DESCRIPTION: Limy breccia, tuff, and andesite of the Nicola Group have been intruded in the vicinity of Knob Hill by indistinct dykes of diorite and monzonite. The westerly portion of the property is underlain by volcanic and sedimentary rocks of the Princeton Group. Disseminated pyrite and minor chalcopyrite occur in the vicinity of Knob Hill. Traces of chalcopyrite can be found in the limy breccia. Some quartz-carbonate veins with chalcopyrite have been found on Knob Hill.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; ground magnetometer survey, 37 line-miles; grid cut and flagged covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 269 (BOB, BON).

GH, K, L (Fig. B, No. 7)

LOCATION: Lat. 49° 27′ Long. 120° 18′ (92H/8W)
SIMILKAMEEN M.D. On the north bank of the Similkameen River, immediately west of Steven Creek, at approximately 3,000 feet elevation.

CLAIMS: GH 1 to 6, K 1 to 10, L 1 to 15.

OWNER: FURY EXPLORATIONS LTD., 433, 355 Burrard Street, Vancouver V6C 2G8.

DESCRIPTION: The property is underlain by leucocratic quartz diorite which has been intruded by various dykes.

WORK DONE: Reconnaissance geological survey covering all claims; preliminary magnetometer survey, 11 line-miles at 100-foot intervals covering K and L claims.

REFERENCES: Assessment Reports 4373, 4636.

NICKEL PLATE (92H/SE-38) (Fig. B, No. 4)

LOCATION: Lat. 49° 22.5′ Long. 120° 02.0′ (92H/8E)
OSOYOOS M.D. Two miles northeast of Hedley, on Nickel Plate Mountain, between 4,000 and 6,000 feet elevation.

CLAIMS: Mineral leases M-68 to M-73 comprising 36 claims and 83 Crown-granted claims.

OWNER: MASCOT NICKEL PLATE MINES LIMITED, Box 10010, Pacific Centre, 700 West Georgia Street, Vancouver.

METALS: Gold, copper.

DESCRIPTION: Mineralization on Nickel Plate Mountain occurs in masses of skarn which are developed where small bodies of gabbro and diorite have invaded a thick pile of westerly dipping and complexly folded Upper Triassic sedimentary rocks of the Nicola Group.

WORK DONE: Surface geological mapping, 1 inch equals 50 feet covering Exchange Fraction (Lot 725), Mound (Lot 1876), and Nickel Plate (Lot 741); surface diamond drilling, three holes totalling 407 feet on Exchange Fraction (Lot 725) and Warhorse (Lot 2478); road construction, one-half mile on Exchange Fraction, Mound, Sunnyside (Lot 740), and Woodland (Lot 1798).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 393; Billingsley, P. and Hume, C. B, *CIM,* Trans., Vol. XLIV, 1941, pp. 524-590.

JM (92H/SE-113) (Fig. B, No. 3)

LOCATION: Lat. 49° 27′ Long. 120° 09′ (92H/8E)
OSOYOOS M.D. Eight miles north-northwest of Hedley, on a branch of McNulty Creek, at approximately 5,500 feet elevation.

(92H/9W)

CLAIMS: HI 1, 3, 5, 7, 9, 11, 13, 18 to 26, 29, 31, 33, 35, DUC 1 to 14.

OWNER: J. M. McAndrew.

OPERATOR: DUCANEX RESOURCES LIMITED, 312, 409 Granville Street, Vancouver V6C 1T2.

METAL: Copper (trace).

DESCRIPTION: The showings are in a roof pendant of Upper Triassic Nicola rocks, surrounded by intrusive rocks of the Okanagan batholith. Mineralization consists of disseminated pyrite and magnetite, minor chalcopyrite. Molybdenite was previously reported.

WORK DONE: Magnetometer survey, 7.1 line-miles covering HI 5, 7, 9, 20-26, 35; geochemical soil survey, 268 samples, 7.0 line-miles covering same claims; percussion drilling, five holes totalling 1,270 feet on HI 22 and 23; road construction, 2 miles on HI 3, 5, 7, 9, 21, 22, 23.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, p. 219; Assessment Reports 1225, 1615, 1617, 4421.

DC (Fig. B, No. 12)

LOCATION: Lat. 49° 32′ Long. 120° 26′ (92H/9W)
SIMILKAMEEN M.D. Six miles northeast of Princeton and 1 mile southeast of Jura station, at approximately 3,500 feet elevation.

CLAIMS: DC 4, 6, 8, 11 to 13, 15 to 19.

OWNER: COMINCO LTD., 2100, 200 Granville Square, Vancouver V6C 2R2.

METAL: Copper (trace).

DESCRIPTION: Volcanic and sedimentary rocks of the Upper Triassic Nicola Group which underlie the property comprise basic to intermediate flow and pyroclastic units with minor intercalated limestone. Traces of copper mineralization have been noted along narrow shears and in fractures developed in the Nicola rocks.

WORK DONE: Magnetometer survey, 10 line-miles covering DC 2, 4, 6, 8, 11-13, 17, 18.

REFERENCE: Assessment Report 4419.

ELK, SLEEPER (Fig. B, No. 13)

LOCATION: Lat. 49° 33′ Long. 120° 27′ (92H/9W)
SIMILKAMEEN M.D. Seven miles north-northeast of Princeton, 1 mile north of Jura Station, between 3,400 and 4,000 feet elevation.

CLAIMS: ELK 1 to 6, 11 to 14, 15, 16; SLEEPER 1 to 5 and 7 to 20, ND 4 to 29.

OWNER: COP-EX MINING CORPORATION LIMITED, Box 10054, Pacific Centre, 700 West Georgia Street, Vancouver.

METAL: Copper.

(92H/9W)

DESCRIPTION: The claims are underlain by volcanic rocks of the Upper Triassic Nicola Group which are intruded by granitic rocks of the Okanagan batholith. Mineralization consists of chalcopyrite, bornite, and magnetite in veinlets associated with kaolin alteration.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Elk and Sleeper claims and 1 inch equals 400 feet covering Elk, Sleeper, and ND claims; IP survey, 10 line-miles covering Elk 15 and 16 and ND 18, 20, 22, 47; surface diamond drilling, three holes totalling 1,410 feet on Elk 15 and 16 and ND 47.

HO (Fig. B, No. 15)

LOCATION: Lat. 49° 35′ Long. 120° 27′ (92H/9W)
SIMILKAMEEN M.D. Eight miles north-northeast of Princeton, on Christian Creek.

CLAIMS: HO 1 to 37 (a restaking of the western half of the ROK claims).

OPERATOR: TITAN POLARIS MINES LTD., 703, 535 Thurlow Street, Vancouver.

DESCRIPTION: Claims extend across the contact zone between dense Nicola andesite and a diorite border phase of the Okanagan batholith.

WORK DONE: Linecutting and magnetometer surveying, approximately 10 line-miles covering HO 1-10 and 22-37.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 277 (ROK); Assessment Report 4555.

FK (92H/NE-104) (Fig. B, No. 16)

LOCATION: Lat. 49° 36′ Long. 120° 22′ (92H/9W)
SIMILKAMEEN M.D. Eleven miles northeast of Princeton, on the south side of Finnegan Creek and the east side of Hayes Creek.

CLAIMS: PAT 1 to 34.

OWNER: RIMCO RESOURCES LTD., 330, 890 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain mainly by Osprey Lake granodiorite. Minor pyrite and chalcopyrite are disseminated in it in places on the western claims.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet; magnetometer survey, 24 line-miles covering Pat 1-34.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 125; Assessment Report 4833.

ELN, SHR (Fig. B, No. 14)

LOCATION: Lat. 49° 36′ Long. 120° 28′ (92H/9W)
SIMILKAMEEN M.D. Approximately 10 miles north of Princeton, on the east side of Summers Creek.
CLAIMS: ELN 1 to 19, 21 to 23, SHR 1 to 30, JOY 1 to 3.
OWNER: CANWEX EXPLORATIONS LTD., 1666 West Broadway, Vancouver.
DESCRIPTION: Country rocks in the claim area include Nicola Group volcanic rocks bounding the west edge of the Osprey Lake batholith.
WORK DONE: 1972 – IP survey, approximately 6 line-miles covering SHR 4, 6 to 16; 1973 – surface diamond drilling, two holes totalling 1,175 feet on SHR 6.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 178; Assessment Report 4444.

STAR (92H/NE-124) (Fig. B, No. 17)

LOCATION: Lat. 49° 43′ Long. 120° 26′ (92H/9W)
SIMILKAMEEN M.D. Approximately 18 miles northeast of Princeton, at the headwaters of Rampart Creek.
CLAIMS: STAR 1 and 2, 9 to 18, 50, 52, 54, 57 to 59, 61 to 63, 65; STAR 45 Fraction.
OWNER: Titan-Polaris Mines Limited (formerly Polaris Mines Limited).
OPERATOR: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.
METAL: Copper.
DESCRIPTION: The claims are underlain by Nicola Group basic to intermediate, porphyritic and non-porphyritic lavas and tuffs in contact with granitic rocks to the south. Mineralization includes finely disseminated pyrite and magnetite and scattered chalcopyrite on fracture faces.
WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; geochemical soil survey, 176 samples, 3.6 line-miles covering Star 1, 2, 11, 13, 15, 16, 50, 53, and 54; biogeochemical survey, 50 samples, 3.6 line-miles covering same claims.
REFERENCE: Assessment Report 4491.

EJ (VARGAS) (Fig. B, No. 22)

LOCATION: Lat. 49° 41′ Long. 120° 30′ (92H/9W, 10E)
SIMILKAMEEN M.D. Between 15 and 18 miles north of Princeton, astride Summers Creek, at approximately 3,000 feet elevation.
CLAIMS: EJ 1 to 18, 37 to 42, 45, 47.
OWNER: VARGAS MINES LTD., 675, 555 Burrard Street, Vancouver.
WORK DONE: Magnetometer survey, 18.4 line-miles.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 127; Assessment Report 4346.

EJ (CALICO SILVER) (92H/NE-119) (Fig. B, No. 21)

LOCATION: Lat. 49° 43' Long. 120° 30' (92H/9W, 10E)
SIMILKAMEEN M.D. Between 18 and 20 miles north of Princeton, astride Summers Creek, at approximately 3,000 feet elevation.

CLAIMS: EJ 19 to 36, 43, 44, 48 to 74.

OWNER: J. Butterworth.

OPERATOR: CALICO SILVER MINES LTD., 420, 475 Howe Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claim block is underlain by Nicola Group volcanic rocks consisting of fragmental rocks, flow breccias, and bedded tuffs and other minor units. Minor copper mineralization is present in the volcanic rocks as chalcocite and secondary malachite in an outcrop on EJ 24.

WORK DONE: Surface geological mapping; aerial photogeological interpretation; geochemical soil survey, 168 samples collected and analysed.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 127; Assessment Report 4345.

LP, LB (Fig. B, No. 23)

LOCATION: Lat. 49° 34' Long. 120° 37' (92H/10E)
SIMILKAMEEN M.D. Nine miles northwest of Princeton, at the headwaters of Asp Creek, between 4,000 and 5,000 feet elevation.

CLAIMS: LP 1 to 24, LB 1 to 6, LJ 1 to 4, LR 3 to 18.

OWNER: AVALANCHE INDUSTRIES LTD., 24, 448 Seymour Street, Vancouver.

DESCRIPTION: The property is underlain mainly by Kingsvale Group andesite breccia and porphyritic dacite. Spences Bridge Group rhyolite, showing pronounced flow lines, is exposed in the southeast and on the north boundary. Nicola Group andesite, in part pyritic, is exposed in the north between the rhyolite and porphyritic dacite. Otter granite is exposed along a 1,400-foot section of Asp Creek in the west.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; magnetometer survey, 9.5 line-miles covering LB 1-6, LJ 1 and 3, and LR 11.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 129; Assessment Reports 4231, 4848.

HAL (92H/NE-125) (Fig. B, No. 24)

LOCATION: Lat. 49° 32' Long. 120° 31' (92H/10E)
SIMILKAMEEN M.D. Five miles north of Princeton, on Highway 5, at approximately 2,500 feet elevation.

CLAIMS: HAL 1 to 16.

OWNER: Canorex Development Ltd. (formerly Lancaster Mining Company Ltd.).

(92H/10E)

OPERATORS: DOME EXPLORATION (CANADA) LIMITED, 702, 360 Bay Street, Toronto, Ont. and NEWCONEX CANADIAN EXPLORATION LTD., 808, 525 Seymour Street, Vancouver V6B 3H7.

METAL: Copper.

DESCRIPTION: The claims are underlain by volcanic rocks of the Upper Triassic Nicola Group which are unconformably overlain by Middle Eocene sedimentary rocks of the Princeton Group.

WORK DONE: Percussion drilling, three holes totalling 628 feet on Hal 1.

V, W (Fig. 8, No. 25)

LOCATION: Lat. 49° 32′ Long. 120° 35′ (92H/10E)
SIMILKAMEEN M.D. Six miles north-northwest of Princeton, on Asp Creek.

CLAIMS: V 1 to 20, W 1 to 20.

OWNER: CANOREX DEVELOPMENT LTD. (formerly Lancaster Mining Company Ltd.), 8, 784 Thurlow Street, Vancouver.

WORK DONE: Linecutting, magnetometer survey, and VLF EM survey, 15 line-miles covering V 1-6, 16-20 and W 9-12.

REFERENCE: Assessment Report 4616.

EXIE, JM (Fig. 8, No. 26)

LOCATION: Lat. 49° 31′ Long. 120° 31′ (92H/10E)
SIMILKAMEEN M.D. Four miles north of Princeton, on Highway 5.

CLAIMS: EXIE 7 to 18, EXIE 19 to 22 Fractions, JM 1 to 20, 26 to 31, JM 21 to 23 Fractions.

OWNERS: Newconex Canadian Exploration Ltd. and J. McAndrew.

OPERATOR: NEWCONEX CANADIAN EXPLORATION LTD., 808, 525 Seymour Street, Vancouver V6B 3H7.

DESCRIPTION: The claim area is underlain mainly by agglomerate and other volcanic rocks of the Nicola Group. They have been intruded by two feldspar porphyry dykes. Princeton Group sedimentary rocks occur along Hardwick Creek on the Exie 14 claim.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 10 line-miles; and geochemical soil survey, 84 samples covering Exie 8, 10, 12, 14, 18, 20, 22, Exie 19 and 21 Fractions, and JM 1-7, 17, and 19.

REFERENCES: Assessment Reports 4775, 4781.

AT (92H/NE-120) (Fig. 8, No. 42)

LOCATION: Lat. 49° 38′ Long. 120° 37′ (92H/10E)
SIMILKAMEEN M.D. Thirteen miles north-northwest of Princeton, immediately south of Dry Lake, at approximately 3,550 feet elevation.

CLAIMS: AT 1 to 29, 31 to 54.

(92H/10E)

OWNER: KOMO EXPLORATIONS LTD., 10th Floor, 549 Howe Street, Vancouver.

METAL: Copper.

DESCRIPTION: Trenching has exposed a copper showing in pyritized Nicola Group volcanic rocks at the contact with the Mount Pike stock.

WORK DONE: 1972 – linecutting, 14.4 miles of grid; reconnaissance geological, magnetometer, and geochemical surveys.

REFERENCE: Assessment Report 4349.

AXE (92H/NE-40) (Fig. B, No. 20)

LOCATION: Lat. 49° 39′ Long. 120° 32′ (92H/10E)
SIMILKAMEEN M.D. Between 12 and 16 miles north of Princeton, on the west side of Summers Creek, at approximately 4,500 feet elevation.

CLAIMS: AXE, BUD, BOL, LOX, RUM, FAN, totalling 221.

OWNER: ADONIS MINES LTD., 301, 510 West Hastings Street, Vancouver.

METALS: Copper, minor molybdenum.

DESCRIPTION: The claims are underlain by volcanic rocks of the Upper Triassic Nicola Group intruded by a northwest-trending body of granodiorite and by numerous dykes of diorite, microdiorite, feldspar porphyry, and andesite. Faulting is strong and complex. Chalcocite occurs in some areas.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet; surface diamond drilling, three holes totalling 1,367 feet on Axe 22; percussion drilling, 74 holes totalling 9,089 feet on Fan, Axe, and Lox claims; road construction, 5 miles on Lox claims; trenching, 6,000 feet on Axe 22.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 280.

ANITA (MONTANA MINES) (Fig. B, No. 27)

LOCATION: Lat. 49° 43′ Long. 120° 33′ (92H/10E)
SIMILKAMEEN M.D. Eighteen Miles north of Princeton and 2.5 miles northwest of Allison Lake.

CLAIMS: ANITA 23 to 48.

OWNER: Chatham Resources Ltd. (formerly Montana Mines Ltd.).

OPERATOR: CRAIGMONT MINES LIMITED, 270, 170 Seymour Street, Kamloops.

WORK DONE: IP survey, 4.7 line-miles on a 400 by 100-foot grid.

REFERENCE: Assessment Report 4228.

FAN, ANITA (92H/NE-113) (Fig. B, No. 28)

LOCATION: Lat. 49° 39′ Long. 120° 35′ (92H/10E)
SIMILKAMEEN M.D. Twelve and one-half miles northwest of Princeton, 2 miles east of Dry Lake, at approximately 2,000 feet elevation.

(92H/10E)

CLAIMS: FAN 25 to 28, 43 to 48, ANITA 3 to 10, JE 7, 9, 11, 12, 14, LEN 1.

OWNER: EQUATORIAL RESOURCES LTD., 1019, 409 Granville Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain by volcanic rocks of the Upper Triassic Nicola Group which have been cut by pink granodiorite of the Allison Lake intrusive body.

WORK DONE: IP survey, 4.0 line-miles covering Fan 25-28, 45, and 47; geochemical survey covering same claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 130; Assessment Report 4416.

FAN, NU (Fig. B, No. 29)

LOCATION: Lat. 49° 38' Long. 120° 34' (92H/10E)
SIMILKAMEEN M.D. Twelve miles north-northwest of Princeton, on the east side of Laird Lake.

CLAIMS: FAN 1 to 6, 35 to 42, 55, NU 6 to 13, 25 to 28, 39 to 48, JE 21 to 24.

OWNER: AALENIAN RESOURCES LTD. (formerly Croydon Mines Ltd.), 1620 Westover Road, North Vancouver V7J 1X6.

WORK DONE: A topographical survey of 35 line-miles of grid and a photogeological interpretation of the property.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 129 (FAN); Assessment Report 4417.

FAN (BRONSON) (Fig. B, No. 30)

LOCATION: Lat. 49° 39' Long. 120° 34' (92H/10E)
SIMILKAMEEN M.D. Thirteen miles north-northwest of Princeton and 1 mile northeast of Laird Lake.

CLAIMS: FAN 29 to 34, 49 to 54, 56.

OWNER: Jay Butterworth.

OPERATOR: BRONSON MINES LTD., c/o J. Butterworth, Route 1, Box 1629, Auburn, California.

METAL: Copper.

DESCRIPTION: Rock exposed on the property includes Nicola Group andesite which has been epidotized and intruded by two wide dykes of granodiorite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical soil survey, 494 samples taken at 100 by 400-foot grid spacing.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 129; Assessment Report 4738.

NU (BUTTERWORTH) (Fig. B, No. 31)

LOCATION: Lat. 49° 36' Long. 120° 34' (92H/10E)
SIMILKAMEEN M.D. Ten miles north-northwest of Princeton, 1 mile east of McCaffrey Lake.
CLAIMS: NU 14 to 17, 29 to 34.
OWNER: J. BUTTERWORTH, Route 1, Box 1629, Auburn, California.
WORK DONE: Magnetometer survey, 10 line-miles, spacing 400 feet, intervals 200 feet.
REFERENCE: Assessment Report 4343.

JE, HI (Fig. B, No. 32)

LOCATION: Lat. 49° 36' Long. 120° 35' (92H/10E)
SIMILKAMEEN M.D. Thirteen miles north-northwest of Princeton, immediately north of Laird Lake.
CLAIMS: JE 13, 15 to 20, HI 1 and 2.
OWNER: J. BUTTERWORTH, Route 1, Box 1629, Auburn, California.
WORK DONE: Magnetometer survey, 6.3 line-miles, grid spacing 400 feet by 100 feet.
REFERENCE: Assessment Report 4344.

ANITA (BUTTERWORTH) (Fig. B, No. 33)

LOCATION: Lat. 49° 42' Long. 120° 33' (92H/10E)
SIMILKAMEEN M.D. Sixteen miles north of Princeton and 2 miles east of Allison Lake.
CLAIMS: ANITA 11 to 22.
OWNER: J. BUTTERWORTH, Route 1, Box 1629, Auburn, Calfiornia.
WORK DONE: Linecutting.
REFERENCE: Assessment Report 4348.

HW (Fig. B, No. 34)

LOCATION: Lat. 49° 36' Long. 120° 35' (92H/10E)
SIMILKAMEEN M.D. Ten miles north-northwest of Princeton, immediately west of McCaffrey Lake.
CLAIMS: HW 1 to 24.
OWNER: BRENDON RESOURCES LTD., 1790, 771 Hornby Street, Vancouver.
WORK DONE: Linecutting and VLF EM survey, 20 line-miles; geochemical soil survey, 383 samples taken at 200 by 500-foot grid spacing covering all claims.
REFERENCE: Assessment Report 4783.

MIC (Fig. B, No. 35)

LOCATION: Lat. 49° 36' Long. 130° 38' (92H/10E)
SIMILKAMEEN M.D. Eleven miles northwest of Princeton, at the headwaters of Asp Creek.

CLAIMS: MIC 1 to 10.

OWNER: R. MacDONALD, 24, 448 Seymour Street, Vancouver.

DESCRIPTION: Spences Bridge Group andesite underlies MIC 1 to 4 and has been intruded by Otter granite and quartz diorite. Kingsvale Group volcanic breccia underlies MIC 9 and 10. Andesite exposed on MIC 8 may comprise part of the Nicola Group sequence.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims.

REFERENCE: Assessment Report 4757.

ANN (Fig. B, No. 36)

LOCATION: Lat. 49° 33' Long. 120° 31' (92H/10E)
SIMILKAMEEN M.D. Six miles north of Princeton, on the west side of Summers Creek.

CLAIMS: ANN 1 to 30.

OWNER: CONSOLIDATED FORTUNE CHANNEL MINES LTD., 145, 890 West Pender Street, Vancouver V6C 1J9.

WORK DONE: Magnetometer and VLF EM survey, 17.2 line-miles; geochemical soil survey, 736 samples taken at 100 by 400-foot grid spacing.

REFERENCE: Assessment Report 4726.

X, Y (Fig. B, No. 37)

LOCATION: Lat. 49° 34' Long. 120° 35' (92H/10E)
SIMILKAMEEN M.D. Eight miles north-northwest of Princeton, on the west side of Highway 5, at the headwaters of Hoover Creek.

CLAIMS: X 8 to 22, 36 to 40, Y 1 to 7, 23 to 35.

OWNER: DUNBAR RESOURCES LTD., 200, 1405 Hunter Street, North Vancouver.

DESCRIPTION: The claims are underlain by Nicola Group andesite and altered volcanic rocks in the southeast, a small stock of Lower Cretaceous granodiorite and diorite in the north, and overlapping Kingsvale Group andesite breccia in the southwest. A feldspar porphyry dyke of the Otter intrusions cuts the Kingsvale unit.

WORK DONE: Reconnaissance surface geological mapping, 1 inch equals 1,000 feet and surface geological mapping at 1 inch equals 400 feet; linecutting, 11.6 miles; magnetometer survey, 3 line-miles covering Y 24, 26, 28, 35, and 36.

REFERENCE: Assessment Report 4674.

(92H/10E)

EG (Fig. B, No. 38)

LOCATION: Lat. 49° 33′ Long. 120° 33′ (92H/10E)
SIMILKAMEEN M.D. Six and one-half miles north-northwest of Princeton, on the west side of Allison Creek at the mouth of Hoover Creek.
CLAIMS: EG 1 to 28.
OWNER: Kaare J. Pettersen.
OPERATOR: G. S. ELDRIDGE, c/o 250 north Grosvenor Avenue, Burnaby.
WORK DONE: Geochemical soil survey, 230 samples during 1972; magnetometer and VLF EM survey, 20,000 line-feet during 1973 covering EG 1, 2, and 15-28.
REFERENCE: Assessment Report 4590.

BULL, KP (Fig. B, No. 39)

LOCATION: Lat. 49° 31′ Long. 120° 33′ (92H/10E)
SIMILKAMEEN M.D. Five miles north-northwest of Princeton, at the head of Hardwick Creek.
CLAIMS: BULL 1 to 28, KP 1 to 20.
OWNER: NATIONWIDE MINING & EXPLORATION LTD., 805, 1177 West Hastings Street, Vancouver.
WORK DONE: Linecutting and magnetometer survey, 22 line-miles covering Bull 1-20, 22, 24, 26, 28 and KP 5-10.
REFERENCE: Assessment Report 4524.

PINE (92H/NE-3) (Fig. B, No. 40)

LOCATION: Lat. 49° 42′ Long. 120° 35′ (92H/10E)
SIMILKAMEEN M.D. Sixteen miles north-northeast of Princeton, immediately east of Allison Lake.
CLAIMS: PINE 1 to 35, REG 1 to 16, DY 1 to 8.
OWNER: BLUE GULCH EXPLORATIONS LTD., 1700, 777 Hornby Street, Vancouver.
METAL: Copper.
DESCRIPTION: The property straddles the contact between granodiorite and quartz diorite of the Allison Lake intrusions on the southwest and Nicola Group andesite, argillite, and tuff on the northeast.
WORK DONE: Surface geological mapping, 1 inch equals 400 feet and geochemical soil survey, 1,096 samples covering 45.7 line-miles on grid spacing of 200 feet by 400 feet covering Pine 1-35, Reg 5, 6, 13, and DY 1 and 2.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 278; Assessment Reports 1857, 4464.

AL (92H/NE-121) (Fig. B, No. 41)

LOCATION: Lat. 49° 43' Long. 120° 36' (92H/10E)
SIMILKAMEEN M.D. Eighteen miles north-northwest of Princeton and 1 mile northeast of the north end of Allison Lake.

CLAIMS: AL 1 to 6.

OWNER: J. POLONI, 5502 – 88 Avenue, Delta.

METAL: Copper (trace).

DESCRIPTION: Minor copper mineralization occurs in narrow shear zones in granitic rock near the contact with Nicola Group volcanic rocks.

WORK DONE: Preliminary geological and geochemical surveys covering 2 line-miles during 1972.

REFERENCE: Assessment Report 4420.

LISA, AD (Fig. B, No. 43)

LOCATION: Lat. 49° 43' Long. 120° 39' (92H/10E)
SIMILKAMEEN M.D. Three miles northwest of the north end of Allison Lake at elevations of 3,700 to 4,700 feet.

CLAIMS: LISA 1 to 20, 26 to 45, AD 1 to 22.

OWNER: MONTEGO RESOURCES LTD. (formerly Zenon Silver Mines Ltd.), 107, 325 Howe Street, Vancouver V6C 1Z7.

DESCRIPTION: Most of the property is underlain by granitic and granodioritic plutons. The southeast and northwest corners are underlain by dark, medium to fine-grained diorite. Nicola Group volcanic rocks are generally confined to the southwest corner of the property.

WORK DONE: Geochemical survey, 2,000 samples covering 48 line-miles; geological survey covering Lisa 1-8, 13-20, 26-33 and AD 1-22 during 1972.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 130; Assessment Reports 4339, 4340.

DD (Fig. B, No. 44)

LOCATION: Lat. 49° 41' Long. 120° 37' (92H/10E)
SIMILKAMEEN M.D. Immediately southwest of the south end of Allison Lake.

CLAIMS: DD 55, 56, 69 to 75.

OWNER: LAURA INDUSTRIES & RESOURCES LTD. (formerly Laura Mines Ltd.), 403, 717 West Pender Street, Vancouver V6C 1G9.

WORK DONE: Detailed geochemical survey, 3 line-miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 283 [DD (LAURA)]; Assessment Report 4337.

CINDY (92H/NE-126) (Fig. B, No. 45)

LOCATION: Lat. 49° 30' Long. 120° 35' (92H/10E)
SIMILKAMEEN M.D. Three and one-half miles north-northeast of the north end of Allison Lake, between 4,500 and 5,000 feet elevation.

CLAIMS: CINDY 2 to 21.

OWNER: JAY BUTTERWORTH, 4727 Wesley Drive, Delta.

METALS: Copper, lead.

DESCRIPTION: Nicola Group pyroclastic rocks, andesite flows, and minor limestone have been irregularly intruded by diorite, hornblende porphyry, and andesite. The area appears to have been broken by numerous faults. On Cindy 13 to 15 the flows and diorite are intensely altered, extensively pyritized, and contain some copper. A quartz vein carries some galena. On Cindy 3 and 4 a volcanic breccia contains pyrite, chalcopyrite, and traces of chalcocite.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet; linecutting, 18 miles covering all claims.

REFERENCE: Assessment Report 4465.

SHAMROCK, NELLIE (92H/NE-92, 110) (Fig. B, No. 18)

LOCATION: Lat. 49° 45' Long. 120° 30' (92H/10E, 16W)
SIMILKAMEEN M.D. Twenty-five miles north of Princeton immediately south and east of the south end of Missezula Lake at approximately 3,000 feet elevation.

CLAIMS: NEL 1 to 12, NEL 1 to 6 and 10 Fractions, LOST 1, 3, 5, 7, NELLIE 1 to 31, WARM 1 to 8.

OWNER: Belcarra Explorations Ltd.

OPERATOR: RIO TINTO CANADIAN EXPLORATION LIMITED, Box 49108, Vancouver V7X 1G4.

METAL: Copper.

DESCRIPTION: The claims are underlain by rocks of the Upper Triassic Nicola Group intruded by fine-grained porphyritic diorite. Disseminated pyrite and minor chalcopyrite have been observed in microporphyritic diorite.

WORK DONE: Underground diamond drilling, six holes totalling 2,674 feet on Nellie 6, 8, 28 and Lost 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 128.

D, R (92H/NE-128) (Fig. B, No. 48)

LOCATION: Lat. 49° 32' Long. 120° 54' (92H/10W)
SIMILKAMEEN M.D. At the Junction of the Tulameen River and Britton (Eagle) Creek at approximately 2,800 feet elevation.

CLAIMS: D 1 to 3, R 1 to 3.

OWNERS: R. STEINER, W. E. PARKER, and HUNTER POINT EXPLORATION LTD., 371 – 56th Street, Delta V4L 1Z4.

METALS: Iron, chromium, platinum, copper, nickel.

(92H/10W)

DESCRIPTION: The claims are reported to be underlain by an oval breccia pipe in peridotite, surrounded by pyroxenite and augite porphyry. Mineralization consists of chromite, magnetite, chalcopyrite, sperrylite, millerite, and asbestos in a gangue of olivine.

WORK DONE: Surface diamond drilling, one hole totalling 100 feet on D 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 131.

MUG, JOSIE (Fig. B, No. 51)

LOCATION: Lat. 49° 35' Long. 120° 48' (92H/10W)
SIMILKAMEEN M.D. On the west side of Otter Lake, north and south of Lockie Creek between elevations of 3,300 and 4,400 feet.

CLAIMS: MUG 1 to 22, 24 to 29, 31 to 66, JOSIE 1 to 6.

OWNERS: Tom Rolston and Gold River Mines & Enterprises Ltd.

OPERATOR: GOLD RIVER MINES & ENTERPRISES LTD., 802, 1433 Burnaby Street, Vancouver.

DESCRIPTION: The claims are underlain by Nicola volcanic rocks on the west and the Coast Plutonic Complex on the east.

WORK DONE: Linecutting; magnetometer and VLF EM survey, 10.2 line-miles; geochemical soil survey, 496 samples taken at 100 by 400-foot grid spacing covering Mug 1-10 and Josie 3 and 5.

REFERENCE: Assessment Report 4588.

LOG (92H/NE-127) (Fig. B, No. 46)

LOCATION: Lat. 49° 35' Long. 120° 55' (92H/10W)
SIMILKAMEEN M.D. Seven miles west-northwest of Tulameen, on Skwum Creek, a tributary of Lawless Creek, at approximately 4,000 feet elevation.

CLAIMS: LOG 1 to 26, LOG 27 Fraction, DAG 1.

OWNER: Kertsi Livingstone.

OPERATOR: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver V7P 2R4.

METAL: Copper.

DESCRIPTION: The claims are underlain by sedimentary and volcanic rocks of Upper Triassic Nicola Group, intruded by feldspar porphyry dykes. The Eagle granodiorite lies immediately to the west. Pyrite and chalcopyrite are disseminated in the Nicola rocks.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; percussion drilling, six holes totalling 1,000 feet on Log 1, 2, 7, and 8.

WHY (92H/NE-129) (Fig. B, No. 49)

LOCATION: Lat. 49° 35' Long. 120° 56' (92H/10W)
SIMILKAMEEN M.D. Eight miles west-northwest of Tulameen, 1 mile west of the junction of Skwum and Lawless Creeks, at approximately 4,000 feet elevation.

CLAIMS: WHY 1 to 4.

OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver V6C 1N5.

METALS: Copper, iron.

DESCRIPTION: The claims area extends across the contact zone between foliated Eagle granodiorite and sedimentary members of the Nicola Group. The granodiorite contains inclusions of augen gneiss. Magnetite, chalcopyrite, and minor bornite occur in a narrow skarn band on Why 2.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering 2 claims; linecutting, 4 miles; geochemical soil survey, 216 samples taken at 100 by 200-foot grid spacing.

REFERENCE: Assessment Report 4673.

IRA (92H/NE-39) (Fig. B, No. 47)

LOCATION: Lat. 49° 36' Long. 120° 55' (92H/10W)
SIMILKAMEEN M.D. Nine miles west-northwest of Tulameen, at the head of Skwum Creek, at approximately 4,500 feet elevation.

CLAIMS: IRA 1, 2, 4, 6, 8 to 24, BIC 1 to 3, MAYNARD 1 to 12, CJH 1 to 20.

OWNER: S. Young.

OPERATOR: RIO TINTO CANADIAN EXPLORATION LIMITED, Box 49108, Vancouver V7X 1G4.

METALS: Copper, molybdenum.

DESCRIPTION: The claims are underlain by volcanic rocks of the Upper Triassic Nicola Group intruded by a body of altered quartz feldspar porphyry. The Eagle granodiorite lies immediately to the west. Pyrite, chalcopyrite, and molybdenite are disseminated through the Nicola volcanic rocks.

WORK DONE: Reconnaissance geological survey covering IRA, BIC, and CJH claims and geochemical survey, 44 soil samples and 19 rock samples during 1972. Geochemical soil survey, 500 samples covering 16 line-miles on IRA, BIC, and Maynard claims and surface diamond drilling, two holes totalling 499 feet on Maynard 2 during 1973.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 381, 382; Assessment Reports 4463, 4466.

BUCK (Fig. B, No. 192)

LOCATION: Lat. 49° 38' Long. 120° 53' (92H/10W)
SIMILKAMEEN M.D. Seven miles from the Tulameen River, on the east side of Lawless Creek, at approximately 5,000 feet elevation.

CLAIMS: BUCK 1 to 52.

(92H/10W)

OWNER: CADET RESOURCES LTD., 805, 1177 West Hastings Street, Vancouver.

DESCRIPTION: The claims are underlain by Nicola Group basalt in the east and granodiorite in the west. Adjacent to the basalt the granodiorite has been sheared and albitized and altered to sericite, muscovite, and talc schists; locally it has been intensely pyritized.

WORK DONE: Linecutting and magnetometer survey, 52 line-miles; VLF EM survey, 35 line-miles; geochemical soil survey, 358 samples taken at 200 by 1,500-foot grid spacing; surface geological mapping, 1 inch equals 500 feet covering Buck 1, 3, 5, 7, 8, 11, 12, 17-22, 33, 35, 48, 50, 52.

REFERENCE: Assessment Report 4840.

FAWN (Fig. B, No. 191)

LOCATION: Lat. 49° 40' Long. 120° 47' (92H/10W)
SIMILKAMEEN M.D. On the west side of Otter Creek, immediately west of Thynne Lake, at approximately 3,500 feet elevation.

CLAIMS: FAWN 1 to 21.

OWNER: CADET RESOURCES LTD., 805, 1177 West Hastings Street, Vancouver.

DESCRIPTION: Nicola Group vari-coloured lavas and Kingsvale Group basalt have been intruded by quartz diorite in the west and south. A shear zone in quartz diorite along Thynne Creek contains veins of massive pyrite.

WORK DONE: Linecutting and magnetometer survey, 27 line-miles; geochemical soil survey, 166 samples taken at 200 by 1,500-foot grid spacing and 234 samples taken at 300-foot centres; surface geological mapping, 1 inch equals 500 feet covering Fawn 1-8 and 17-20.

REFERENCE: Assessment Report 4841.

TOTEM POLE (92H/NE-23) (Fig. B, No. 50)

LOCATION: Lat. 49° 41' Long. 120° 50' (92H/10W)
SIMILKAMEEN M.D. Three miles west of Otter Creek on the north side of Thynne Creek, between elevations of 3,700 and 4,200 feet.

CLAIMS: TB 1 to 10, TOT 1 to 42.

OWNER: Estey Agencies Ltd.

OPERATOR: PAN ARCTIC EXPLORATIONS LTD., 211, 717 West Pender Street, Vancouver.

METALS: Copper, molybdenum, silver, lead.

DESCRIPTION: A trench on TB 3 exposes a shear zone in Nicola andesite. The shear is filled with quartz, calcite, pyrite, chalcopyrite, and molybdenite.

WORK DONE: Linecutting, 10 miles; geochemical soil survey, 206 samples taken at 200 by 200-foot grid spacing covering TB 1-4.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1916, p. 261; *Geol. Surv., Canada,* Mem. 223, p. 97; Assessment Report 4515.

COLDWATER, MAG (92H/NW-22 to 24) (Fig. B, No. 83)

LOCATION: Lat. 49° 41' Long. 121° 01' (92H/11E)
NICOLA M.D. Three and one-half miles north of Coquihalla, on Coldwater River, between 3,400 and 7,000 feet elevation.

CLAIMS: MAG, RIP, BIG JULIE, ZINC, BONNIE LYNN, NOV, LAVERNE, CAP, CRISP, HOPE, HDD, JULIE, LUCKY, COLD, RANDY, totalling approximately 95.

OWNERS: Corval Resources Ltd., B. D. Speton, L. Ovington, Pat Henry, and J. E. Nott.

OPERATOR: DENISON MINES LIMITED, 1500, 444 Fifth Avenue SW., Calgary, Alta.

METALS: Zinc, silver, lead, copper, minor gold and cadmium.

DESCRIPTION: Pyrite, galena, sphalerite, tetrahedrite, and chalcopyrite occur in veins and altered quartz monzonite along the contact between the Eagle granodiorite and altered metasedimentary rocks of the Nicola Group.

WORK DONE: Linecutting and IP survey, 8 line-miles in 1973 extending the 1972 coverage east to the Coldwater River covering Mag 1, 2, Nov 1, 2, Nov Fraction, Hope 5, 6, Rip 1, 2, 55, 56, 59, Tab 1, 2, Rip 69, 70 Fractions.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 132; Assessment Reports 3595, 4173, 4174, 4371, 4516.

WHAT (Fig. B, No. 82)

LOCATION: Lat. 49° 42' Long. 121° 02' (92H/11E)
NICOLA M.D. One mile west of Coldwater River and 3 miles south of Juliet Creek, at approximately 5,500 feet elevation.

CLAIMS: WHAT 1 to 8, PIE 1 to 4.

OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The claims are underlain by foliated quartz diorite belonging to the Eagle granodiorite of Lower Cretaceous or Jurassic age. Minor chalcopyrite observed in float has been associated with aplite veining.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering What 1-8 and Pie 1-4; geochemical soil survey, 665 samples, 14 line-miles covering same claims.

AURUM, IDAHO, PIPESTEM (92H/NW-3, 6 to 11, 13, 14) (Fig. B, No. 84)

LOCATION: Lat. 49° 31' Long. 121° 18' (92H/11W)
NEW WESTMINSTER M.D. Seven miles east-southeast of Yale, at the head of Ladner Creek, at approximately 3,000 feet elevation.

CLAIMS: AURUM 1 to 6 (Lots 1236 to 1241), IDAHO and TRAMWAY (Lots 1234 and 1235), GOLD STAR 1 to 4, CABIN 1 to 14, CABIN 20 and 21 Fractions, CARO 1 to 30, CARO 1 to 7 Fractions.

(92H/11W)

OWNERS: Carolin Mines Ltd. and Summit Mining Co. Ltd.

OPERATOR: CAROLIN MINES LTD., c/o Cochrane Consultants, 4882 Delta Street, Delta.

METAL: Gold.

DESCRIPTION: The claims straddle a serpentine band which is flanked to the east by Jurassic-Cretaceous Ladner slates that strike northeast and dip at moderate angles to the northwest. Mineralization comprises auriferous zones and quartz veins. The zones consist of silicified argillites with disseminated pyrite, pyrrhotite, and chalcopyrite.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet covering Aurum and Idaho claims and 1 inch equals 100 feet and 1 inch equals 400 feet covering all claims; ground magnetometer survey, 30 line-miles covering south half of the property; geochemical soil survey, approximately 3,200 samples, 30 line-miles covering south half of the property; surface diamond drilling, seven holes totalling 1,760 feet on Idaho; surface and underground workings mapped; trenching, 500 feet on Idaho.

REFERENCE: *Minister of Mines, B.C.*, Ann. Rept., 1935, pp. F35-F37.

VICTOR (92H/NW-39) (Fig. B, No. 196)

By J. W. Robinson

LOCATION: Lat. 49° 34′ Long. 121° 28′ (92H/11W)
NEW WESTMINSTER M.D. Two miles west-southwest of Yale, between 2,400 and 3,600 feet elevation.

CLAIMS: VICTOR 1 to 24.

OWNERS: V. Dalstrom and G. Chrane.

OPERATOR: DALTON RESOURCES LTD., 4118 East Hastings Street, North Burnaby.

METALS: Nickel, copper.

DESCRIPTION: The Victor claims are underlain by gneiss, schist, and amphibolite and Upper Cretaceous quartz diorite. A pyroxene amphibolite has intruded the gneiss. The amphibolite carries disseminated pyrrhotite and chalcopyrite mineralization.

WORK DONE: Ten diamond-drill holes ranging in depth from 71 to 262 feet were drilled for a total of 1,398 feet.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 133.

NI (92H/NW-28, 42, 43, 45; 92H/SW-81) (Fig. B, No. 74)

By J. W. Robinson

LOCATION: Lat. 49° 31′ Long. 121° 40′ (92H/12E, 5E)
NEW WESTMINSTER M.D. On the east side of Harrison Lake, in the vicinity of Talc and Cogburn Creeks, at approximately 3,000 feet elevation.

CLAIMS: NI, totalling 428 claims and fractions.

OWNER: GIANT EXPLORATIONS LIMITED, Box 10010, Pacific Centre, 700 West Georgia Street, Vancouver.

(92H/14W)

METALS: Nickel, copper.

DESCRIPTION: Pyrite, pyrrhotite, chalcopyrite, and pentlandite are disseminated in basic and ultrabasic intrusives into sedimentary and volcanic rocks. These rocks have an elongation and strike trending northwest. They are incorporated within diorite and quartz diorite of the Coast Plutonic Complex near its contact with the Chilliwack Group.

WORK DONE: Magnetometer survey, 4.5 line-miles covering NI 3, 83, 85, 87, 251, 262; geochemical soil survey, 235 samples, 4.3 line-miles covering same claims; topography mapped.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 116; Assessment Report 4536.

OLE (Fig. B, No. 86)

LOCATION: Lat. 49° 52′ Long. 121° 25′ (92H/14W)
NEW WESTMINSTER M.D. One-half mile east of Boston Bar, at approximately 2,200 feet elevation.

CLAIMS: OLE 1 to 15.

OWNER: H. Schudeleit.

OPERATOR: RED RIVER MINES LTD., 210, 535 Howe Street, Vancouver.

METALS: Copper, nickel.

DESCRIPTION: In the claim area slates of the Lower and Middle Jurassic Ladner Group have been intruded by ultrabasic plutons. Copper-nickel sulphides have been observed.

WORK DONE: Trenching, 55 feet.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 284, 285.

WHERE (92H/NE-135, 136) (Fig. B, No. 65)

LOCATION: Lat. 49° 57′ Long. 120° 49′ (92H/15W)
NICOLA M.D. Ten miles south of Merritt, 1 mile south of Selish Mountain, at approximately 4,000 feet elevation.

CLAIMS: WHERE 1 to 12.

OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver V6C 1N5.

METALS: Copper, iron.

DESCRIPTION: The property is underlain mainly by Nicola Group volcanic rocks which have been intruded by diorite and gabbro of the Selish Mountain stock in the north and northwest. The Nicola sequence comprises dacite tuff-breccia, massive to porphyritic andesite, massive and amygdaloidal basalt, and small lenses of bedded chert. These rocks have been intruded by aplite and basalt porphyritic dykes and one diorite dyke. Skarn andesite is exposed in two places on Where 3 and contains thin bands of magnetite and hematite and disseminated chalcopyrite.

(92H/15E)

WORK DONE: Linecutting; surface geological mapping, 1 inch equals 200 feet; magnetometer survey, 14 line-miles; and geochemical soil survey, 762 samples covering 14 line-miles on Where 1-6.

REFERENCE: Assessment Report 4677.

DEX (Fig. B, No. 55)

LOCATION: Lat. 49° 46' Long. 120° 32' (92H/15E)
NICOLA M.D. One mile west of the south end of Missezula Lake at approximately 4,000 feet elevation.

CLAIMS: DEX 1 to 16, RED BOX 1 and 3 Fractions.

OWNER: Kalco Valley Mines Ltd.

OPERATOR: ISO EXPLORATIONS LTD., 700, 1177 West Hastings Street, Vancouver V6E 2K5.

METAL: Copper.

DESCRIPTION: The claims are underlain by volcanic breccia, tuffs, and poorly stratified flows of the Upper Triassic Nicola Group, cut by rare dykes.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 5.5 line-miles; VLF EM survey, 7.25 line-miles; seismic survey, approximately 1 line-mile; geochemical soil survey, 148 samples, 5.5 line-miles covering all claims.

REFERENCE: Assessment Report 4415.

ESP (Fig. B, No. 54)

LOCATION: Lat. 49° 48' Long. 120° 33' (92H/15E)
NICOLA and SIMILKAMEEN M.D. Two miles west of the south end of Missezula Lake at approximately 4,000 feet elevation.

CLAIMS: ESP 3 to 6, 33 to 38, 49, 50, 58, 73 to 80, 96, 97, RED BOX 2 and 4 Fractions.

OWNER: Barrier Reef Resources Ltd.

OPERATOR: ISO EXPLORATIONS LTD., 700, 1177 West Hastings Street, Vancouver V6E 2K5.

METAL: Copper.

DESCRIPTION: The claims are underlain by volcanic breccias, tuff, and poorly stratified flows of the Upper Triassic Nicola Group, cut by rare dykes. Mineralization consists of very minor chalcocite and malachite on the ESP 34 claim; elsewhere, minor pyrite, hematite, and limonite.

WORK DONE: Claims surveyed; linecutting; surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 16 line-miles; VLF EM survey, 13.75 line-miles; geochemical soil survey, 218 samples, 9 line-miles covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 135; Assessment Report 4709.

JAY, FEB (Fig. B, No. 59)

LOCATION: Lat. 49° 47′ Long. 120° 35′ (92H/15E)
NICOLA and SIMILKAMEEN M.D. Six miles north of Allison Lake and 2.5 miles west of Missezula Lake.

CLAIMS: JAY 23 to 26, FEB 69 to 78, LIL 1 to 12, NICK 87 to 90, PL 1 to 6, 11, 12.

OPERATOR: COMMAND RESOURCES LTD. (formerly Kodiak Mines Ltd.), 1400, 1030 West Georgia Street, Vancouver V6E 3C2.

WORK DONE: IP survey, 9.8 line-miles during 1972.

REFERENCE: Assessment Report 4446.

MISS (92H/NE-132) (Fig. B, No. 62)

LOCATION: Lat. 49° 48′ Long. 120° 31′ (92H/15E)
NICOLA M.D. Surrounding and to the east of the northern half of Missezula Lake.

CLAIMS: MISS 1 to 70.

OWNER: Maurice Mathieu.

OPERATOR: SCOPE EXPLORATION SERVICES LTD., Box 1101, Merritt.

METAL: Copper.

DESCRIPTION: Chalcopyrite, pyrite, and minor bornite have been reported to occur in veinlets and as fine disseminations.

WORK DONE: Linecutting; magnetometer survey, 7.5 line-miles; geochemical soil survey, 278 samples taken at 100 by 200 or 400-foot grid spacing.

REFERENCE: Assessment Report 4694.

BOSS, DAISY (92H/NE-130, 91) (Fig. B, No. 53)

LOCATION: Lat. 49° 50′ Long. 120° 36′ (92H/15E)
NICOLA M.D. The property is centred 3.5 miles northwest of Missezula Lake at approximately 4,000 feet elevation.

CLAIMS: BOSS 25 to 32, 43 to 54, 65 to 84, 101 to 134, GAIL 81 to 92, BIM 1 to 32, 37, 38, 47 to 82, 91 to 100, 33A to 36A, 39A to 46A, J 1, 3 to 6, J 2 Fraction, LO 89 to 94, 96, 98, PAC 85 to 94, PIXIE 1 to 14, TIGHT 8 and 9, WAL 77 to 92.

OWNER: Adonis Mines Ltd.

OPERATOR: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.

METAL: Copper.

DESCRIPTION: The claims are underlain by varicoloured tuffs and agglomerates and green andesite of the Nicola Group. Narrow bands of grey-green agglomerate contain chalcocite, native copper, and malachite, generally concentrated in and around the fragments. Some fractures in the other rock types are coated with malachite.

WORK DONE: Linecutting; surface geological mapping, 1 inch equals 1,000 feet and 1 inch equals 400 feet; ground magnetomter survey, 35 line-miles; helicopter-borne magnetometer survey, 73 line-miles; ground VLF EM survey, 17 line-miles; topographic mapping, approximately 17 square miles; surface diamond drilling, two holes totalling 230 feet on Bim 74 and 80

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1915, p. 224; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 135; *Geol. Surv., Canada*, Mem. 243, p. 95; Assessment Reports 175, 4495.

RI (Fig. B, No. 57)

LOCATION: Lat. 49° 52′ Long. 120° 42′ (92H/15E)
NICOLA M.D. Six miles southwest of Aspen Grove, northeast of Davis Lake, at approximately 4,000 feet elevation.

CLAIMS: RI 1 to 56.

OWNER: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.

DESCRIPTION: The claims are underlain by rocks of the Upper Triassic Nicola Group which are intruded to the south by granodiorite of the Pike Mountain pluton.

WORK DONE: Reconnaissance surface geological mapping, 1 inch equals 1,000 feet; low level aeromagnetic survey, 34 line-miles; low VLF EM survey, 34 line-miles covering all claims.

WD (Fig. B, No. 61)

LOCATION: Lat. 49° 53′ Long. 120° 37′ (92H/15E)
NICOLA M.D. Four miles south of Aspen Grove, astride Highway 5.

CLAIMS: WD 3 to 6, 19 to 26, 28 to 30, 32, 33 to 45.

OWNER: J. S. Godfrey.

OPERATOR: GROVE EXPLORATIONS LTD., 211, 717 West Pender Street, Vancouver.

WORK DONE: Linecutting, 13.3 miles; geochemical soil survey, 315 samples taken at 200 by 400-foot grid spacing covering WD 3-6, 19-26, 33-39 during 1972.

REFERENCE: Assessment Report 4475.

MIX (Fig. B, No. 60)

LOCATION: Lat. 49° 55′ Long. 120° 36′ (92H/15E)
NICOLA M.D. Three miles south-southeast of Aspen Grove, east of Highway 5.

CLAIMS: MIX 1 to 9, 11; BUNNY 1 to 6, 22, 31 to 33, 35, 36; 3 WAY 11, 12.

(92H/15E)

OWNER: ASPEN GROVE MINES LTD., 3428 East 28th Avenue, Vancouver.

WORK DONE: Linecutting, magnetometer survey, and VLF EM survey, 7.5 line-miles covering Mix 3, 4, and 9.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, G.E.M., 1972, p. 136; Assessment Report 4474.

BOB, TAB (Fig. B, No. 52)

LOCATION: Lat. 49° 58′ Long. 120° 36′ (92H/15E)

NICOLA M.D. One mile north of Aspen Grove, on Highway 5, at approximately 3,200 feet elevation.

CLAIMS: BOB 1 to 10, TAB 1 to 5.

OPERATORS: NORMAN ORR, 2839 Conrad Drive NW., Calgary, Alta. and MILESTONE MINES LIMITED, 574 One Calgary Place, Calgary, Alta.

DESCRIPTION: The claims are underlain by Nicola Group volcanic rocks.

WORK DONE: Claims mapped; magnetometer survey, 10.2 line-miles covering Bob 1-10; geochemical soil survey, 350 samples covering all claims during 1972.

REFERENCE: Assessment Report 3637.

JUNE (92H/NE-61) (Fig. B, No. 58)

LOCATION: Lat. 49° 59′ Long. 120° 33′ (92H/15E)

NICOLA M.D. Four miles northeast of Aspen Grove on the east side of Quilchena Creek, at approximately 3,300 feet elevation.

CLAIMS: JUNE 1 to 6, 8, 10, 12 to 15.

OWNER: BALLINDERRY EXPLORATIONS LTD., 1030, 540 Fifth Avenue SW., Calgary, Alta.

METAL: Copper.

DESCRIPTION: The claims are underlain by massive green andesite and some tuff of the Upper Triassic Nicola Group, which contain widespread epidote and garnet and are cut by a large number of quartz veinlets, most of which trend east-west and dip steeply. K-feldspar and ankerite alteration are also present, especially in the southern part of the property where some dykes of fine-grained syenite and strong faulting in a northeasterly direction are present. To the north and east the volcanic rocks are intruded by granodiorite of the Pennask batholith. Pyrite and chalcopyrite occur in quartz veinlets and as disseminations in the altered volcanic rocks, together with widespread magnetite.

WORK DONE: Surface diamond drilling, three holes totalling 297 feet on June 4.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1966, p. 169; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 379.

BLUE JAY (92H/NE-105) (Fig. B, No. 56)

LOCATION:	Lat. 49° 59' Long. 120° 36' (92H/15E) NICOLA M.D. Four miles north of Aspen Grove, on the east side of Highway 5, at approximately 3,500 feet elevation.
CLAIMS:	BLUE JAY 1 to 24 and 1 to 6 Fractions.
OWNER:	H. Nesbitt.
OPERATOR:	CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.
DESCRIPTION:	The claims are underlain by reddish, autobrecciated augite porphyry, massive red and green breccia, and minor volcanic siltstone and/or tuff of the Upper Triassic Nicola Group, cut by dykes of fine-grained syenite and monzonite porphyry. To the east the volcanic rocks are cut by a large body of diorite which is fine-grained, porphyritic, and brecciated on its western margin. Native copper, chalcocite, bornite, and chalcopyrite occur in the volcanic rocks, especially near dyke boundaries.
WORK DONE:	Surface diamond drilling, one hole totalling 408 feet on Blue Jay 4; percussion drilling, 19 holes totalling 4,400 feet on Blue Jay 3-8, 21, and 22.
REFERENCE:	*B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 286.

XX, KV (Fig. B, No. 63)

LOCATION:	Lat. 49° 56' Long. 120° 45' (92H/15) NICOLA M.D. Five miles west of Aspen Grove, on Voght and Howarth Creeks, at approximately 3,500 feet elevation.
CLAIMS:	XX 1 to 10, 12 to 32, KV 1 to 14, 16, 18 to 22, 24.
OWNER:	BOW RIVER RESOURCES LTD., 333, 885 Dunsmuir Street, Vancouver V6C 1N5.
WORK DONE:	Geochemical survey on a 400 by 200-foot grid system.
REFERENCE:	Assessment Report 4428.

COPPER STAR, DOR (92H/NE-36; 92I/SE-164) (Fig. B, No. 66)

LOCATION:	Lat. 50° 00' Long. 120° 36' (92H/15E; 92I/2E) NICOLA M.D. Eleven miles southeast of Merritt, at Courtney Lake, between 3,500 and 4,000 feet elevation.
CLAIMS:	DOR 1 to 34.
OWNER:	TANJO MINES LTD., 520, 602 West Hastings Street, Vancouver.
METAL:	Copper.
DESCRIPTION:	Chalcocite and malachite occur on fracture surfaces and in quartz veins along northwest-striking shear zones in Nicola Group volcanic rocks.
WORK DONE:	SP and time-domain IP survey, 10 line-miles covering Dor 1-7, 9, 19-25, and 29-32.
REFERENCES:	*B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 139; Assessment Reports 4336, 4779.

PRIMER, KING GEORGE (92H/NE-55, 56) (Fig. B, No. 19)

LOCATION: Lat. 49° 46′ Long. 120° 28′ (92H/16W)
SIMILKAMEEN M.D. Twenty-five miles north of Princeton, immediately south and east of the south end of Missezula Lake, at approximately 3,000 feet elevation.

CLAIMS: OB 1 to 40, OC 1 to 40, OD 1 to 30, BILL 1 to 10.

OWNER: Primer Group Minerals Limited.

OPERATOR: RIO TINTO CANADIAN EXPLORATION LIMITED, Box 49108, Vancouver V7X 1G4.

METAL: Copper.

DESCRIPTION: The claims are underlain by volcanic rocks of the Upper Triassic Nicola Group intruded by fine-grained porphyritic diorite. Mineralization consists of quartz-magnetite-chalcopyrite veinlets and stringers which cut feldspar porphyry.

WORK DONE: Surface diamond drilling, five holes totalling 2,103 feet on OB 5, 6, 12, and 14.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 128.

SNOWSTORM, AMANDA (92H/NE-32, 63) (Fig. B, No. 68)

LOCATION: Lat. 49° 46′ Long. 120° 19′ (92H/16W)
SIMILKAMEEN M.D. Eight miles west-northwest of Osprey Lake village, on Siwash Creek, between elevations of 3,600 and 4,200 feet.

CLAIMS: AMANDA 1 to 24, AMIE 1 and 2, PACO 1 to 20 and 101 Fraction.

OWNER: DIANA EXPLORATIONS LTD., 551 Howe Street, Vancouver.

METALS: Gold, silver, lead, zinc, copper.

DESCRIPTION: Altered porphyritic quartz monzonite of the Siwash Creek body of the Lower Cretaceous Otter Intrusions is heavily mineralized along northeasterly striking shear and fracture zones. Pyrite, chalcopyrite, bornite, tetrahedrite, galena, sphalerite, and arsenopyrite occur in shear zones, quartz veins, and zones of silicification.

WORK DONE: Prospecting on Amanda, Amie, and Paco claims; surface diamond drilling, three holes totalling 150 feet on Paco 1 and 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 141; *Geol. Surv., Canada*, Mem. 243, pp. 108, 109.

EL PASO (92H/NE-30) (Fig. B, No. 194)

LOCATION: Lat. 49° 49′ Long. 120° 22′ (92H/16W)
SIMILKAMEEN M.D. Seven miles east-northeast of the south end of Missezula Lake, on the north side of Siwash Creek, at approximately 4,500 feet elevation.

CLAIMS: PEM 1 and 2, BLUESTONE 1 to 4, TJ 1 to 8, RHS 1 to 14, DRAW 1, FU 2 Fraction.

OWNER: E. Mullin.

OPERATOR: PAN ARCTIC EXPLORATIONS LTD., 1714, 1055 West Georgia Street, Vancouver.

(92H/16W, 15E)

METALS: Lead, silver, gold, zinc.

DESCRIPTION: One or more veins of banded quartz carry arsenopyrite, pyrite, sphalerite, and galena and cut andesitic rocks of the Nicola Group. The vein(s) have been explored by adits and open cuts.

WORK DONE: Surface diamond drilling, one hole totalling 372 feet on Pem 2.

REFERENCES: *Geol. Surv., Canada,* Mem. 243, p. 109; Assessment Report 4894.

BUCK, ZULA (92H/NE-133, 134) (Fig. B, No. 64)

LOCATION: BUCK, DOE, MAD:
Lat. 49° 50′ Long. 120° 28′ (92H/16W, 15E)
SIMILKAMEEN and NICOLA M.D. The claims are centred 4 miles east-northeast of the north end of Missezula Lake.
ZULA:
Lat. 49° 47′ Long. 120° 29′ (92H/16W, 15E)
SIMILKAMEEN and NICOLA M.D. The Zula claims are centred 1 mile north of the south end of Missezula Lake.

CLAIMS: BUCK 1 to 99, DOE 1 to 79, MAD 1 to 16, ZULA 1 to 12, 15 to 32.

OWNER: GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD., 736 Eighth Avenue SW., Calgary, Alta.

METAL: Copper.

DESCRIPTION: The claims are underlain by a generally well-layered succession of green volcanic breccia and lahar deposits intercalated with abundant tuff, volcanic siltstone, and some andesitic flows of the Upper Triassic Nicola Group. These rocks trend northerly and dip at moderate angles to the west. They are intruded by a few northerly trending dykes of fine-grained syenite and monzonite porphyry and, a short distance north of the claim group, by a mass of granodiorite and quartz monzonite of the Pennask batholith. Minor disseminations of chalcocite, bornite, and chalcopyrite are reported to occur within the claim boundary.

WORK DONE: Surface geological mapping covering all Buck claims; magnetometer survey, 30 line-miles covering Buck claims and 8 line-miles covering Mad claims; geochemical soil survey, 824 samples, 30 line-miles covering Buck claims; 234 samples, 8 line-miles covering Mad claims; and 88 samples, 6.5 line-miles covering Doe claims.

REFERENCES: Assessment Reports 4347, 4552, 4695.

DUCHESS (92H/NE-137) (Fig. B, No. 69)

LOCATION: Lat. 49° 52′ Long. 120° 19′ (92H/16W)
SIMILKAMEEN M.D. Eleven miles north-northwest of Osprey Lake village, 1.5 miles north-northwest of Siwash Lake, at an elevation of approximately 5,500 feet.

CLAIMS: DUCHESS 5 to 16, 18, 20, 22, 24, 26, 36 to 42.

OWNER: D. E. Agur.

(92H/16W)

OPERATOR: OREQUEST EXPLORATION SYNDICATE, 711, 850 West Hastings Street, Vancouver V6C 1E1.

METAL: Copper.

DESCRIPTION: The claims extend across the contact between Nicola Group andesite and biotite-hornblende quartz diorite of the Osprey Lake batholith. Epidotized meta-andesite at the contact contains disseminated pyrrhotite and minor chalcopyrite.

WORK DONE: Linecutting, 25 miles; magnetometer and VLF EM survey, 24 line-miles; geochemical soil survey, 600 samples taken at 200 by 400-foot grid spacing covering Duchess 7-14, 18, 20, 22, 24.

REFERENCE: Assessment Report 4525.

HN-WEN (92H/NE-58) (Fig. B, No. 67)

LOCATION: Lat. 49° 56' Long. 120° 27' (92H/16W)
NICOLA M.D. Six miles east-northeast of Alleyne Lake, at approximately 4,500 feet elevation.

CLAIMS: HILL 1 to 42, 47 to 60, 65 to 126, 201 to 229, 250 to 264, KEV 1 to 78, 81 to 84, 89 to 92, TI 1 to 10.

OWNER: NITRACELL CANADA LTD., 10th Floor, 549 Howe Street, Vancouver V6C 2C6.

METAL: Copper.

DESCRIPTION: The claims are underlain by andesitic volcanic rocks and shale of the Upper Triassic Nicola Group which to the north have been intruded by granitic rocks of the Pennask batholith. Minor chalcopyrite mineralization along fractures in Nicola rocks is found near three old short adits.

WORK DONE: In 1972, 19.2 miles of line was cut and picketted on Hill 1 to 20. Geochemical, VLF EM, IP, and geological surveys were conducted over the grid. Five BQ wireline holes, totalling 2,902.5 feet, were diamond drilled on Hill 4, 11, and 13.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, p. 201 (ECHO, TOE); Assessment Reports 4229, 4230.

KATHLEEN MOUNTAIN (92H/NE-34) (Fig. B, No. 193)

LOCATION: Lat. 49° 46' Long. 120° 05' (92H/16E)
SIMILKAMEEN M.D. Eight and one-half miles south-southwest of the Brenda mine, on the west slope of Kathleen Mountain, at approximately 5,500 feet elevation.

CLAIMS: LEAP 1 to 40.

OWNER: EXEL EXPLORATIONS LTD., 1, 8431 Granville Street, Vancouver.

METALS: Gold, silver, copper, manganese.

DESCRIPTION: The claims are underlain by Kathleen Mountain granodiorite rocks which have been intruded by the Trout Creek porphyry stock and injected by mineralized quartz veins.

(92H/16E)

WORK DONE: Linecutting and magnetometer survey, 13 line-miles; geochemical soil survey, 555 samples taken at 100 by 300-foot grid spacing covering Leap 1-8.

REFERENCES: *Geol. Surv., Canada,* Mem. 243, pp. 110, 111; Assessment Report 4896.

BRENDA MINE (92H/NE-47) (Fig. B, No. 202)

By David Smith

LOCATION: Lat. 49° 53′ Long. 120° 00.5′ (92H/16E)
OSOYOOS M.D. One and one-half miles southeast of Brenda Lake.

CLAIMS: Mineral Leases M-58, M-59, M-77, M-78, M-79, M-82, and M-83 plus 233 located claims. The open pit lies primarily within Mineral Lease M-58.

OWNER: BRENDA MINES LTD., Box 420, Peachland.

METALS: Copper, molybdenum (production shown in Table I).

DESCRIPTION: Chalcopyrite and molybdenite occur with quartz or quartz feldspar as fracture fillings in a quartz diorite host. The majority of fractures are less than one-half inch in width, strike approximately north 60 degrees east, and dip essentially vertical. The intensity of fracturing decreases from the centre of the orebody outwards.

WORK DONE: The mill worked to capacity of 24,000 tons per day throughout the year. Copper concentrates are trucked to Kelowna and transferred to railway cars. During 1973, approximately 16,327,000 tons of material was removed from the pit consisting of: ore mined, 8,969,900 tons; low grade to stockpile, 2,862,800 tons; waste, 3,992,700 tons; overburden, 501,600 tons. The mill treated 8,867,805 tons of ore grading 0.203 per cent copper and 0.058 per cent molybdenum.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 391; 1971, p. 288; 1972, p. 142.

ASHCROFT 92I

MAG (92I/SE-87) (Fig. B, No. 86)

LOCATION: Lat. 50° 10′ Long. 120° 28′ (92I/11W)
NICOLA M.D. Two miles northwest of Quilchena, one-half mile east of Nicola Lake and 3,000 feet south of Indian Reserve 1, between 2,500 and 3,000 feet elevation.

CLAIMS: MM 1 to 10.

OWNER: M. Morrison.

OPERATOR: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain by volcanic rocks of the Nicola Group which to the west have been intruded by granodiorite of the Nicola batholity. Mineralization consists of very minor chalcopyrite and bornite as disseminations in the volcanic rocks, epidote veinlets, and occasional narrow quartz veins.
WORK DONE: Percussion drilling, six holes totalling 1,200 feet on MM 2, 3, and 4.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 377.

ME (92I/SE-165) (Fig. B, No. 87)

LOCATION: Lat. 50° 04′ Long. 120° 34′ (92I/2E)
NICOLA M.D. Five miles south of Nicola Lake, on the west side of Indian Reserve 7, between 3,500 and 4,000 feet elevation.
CLAIMS: ME 1 to 8, TYE 1 to 20, YT 1 to 12.
OWNER: Carolin Mines Ltd.
OPERATOR: TORONADO DEVELOPMENT CORP. LTD., 107, 325 Howe Street, Vancouver.
METALS: Copper, molybdenum, silver.
DESCRIPTION: The property is underlain mainly by Nicola Group green andesites with intercalated tuffs and argillites. Intrusive rocks vary from monzonitic to dioritic composition. Mineralization consists of chalcopyrite, bornite, pyrite, and minor values of molybdenum and silver.
WORK DONE: 1972 – geological and geochemical surveys; 1973 – time-domain IP survey, approximately 4 line-miles.
REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1967, p. 167; Assessment Reports 4325, 4805.

COPPER STAR, DOR (92H/NE-36; 92I/SE-164) (Fig. B, No. 66)

LOCATION: Lat. 50° 00′ Long. 120° 36′ (92H/15E; 92I/2E)
Report on this property in section 92H/15E.

HAWK (Fig. B, No. 90)

LOCATION: Lat. 50° 10′ Long. 120° 59′ (92I/2W)
NICOLA M.D. Nine and one-half miles west-northwest of Merritt, on the south slope of Promontory Hill, at approximately 4,200 feet elevation.
CLAIMS: HAWK 1 to 35.
OWNER: RED RIVER MINES LTD., 210, 535 Howe Street, Vancouver.
METAL: Copper.
DESCRIPTION: The claims are underlain by volcanic and predominantly limy sedimentary rocks of the Nicola Group northwest of the northeast-striking contact of the Coyle granodiorite stock.
WORK DONE: Magnetometer survey, 5 line-miles.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 145; Assessment Reports 330, 4767.

ES, SA (Fig. B, No. 89)

LOCATION: Lat. 50° 12′ Long. 120° 48′ (92I/2W)
NICOLA M.D. Six miles north of Merritt, on the eastern boundary of Indian Reserve 1, between 4,000 and 4,500 feet elevation.

CLAIMS: ES 1 to 45, 47, 48, SA 1 to 7.

OWNER: MINAS DE CERRO DORADO LTD., 107, 325 Howe Street, Vancouver.

DESCRIPTION: The property is underlain mainly by altered Nicola Group volcanic rocks. The southeastern portion of the claims is underlain by what appears to be a medium to fine-grained quartz diorite which is similar in appearance to the Bethlehem phase of the Guichon Creek batholith. Sedimentary rocks of the Tertiary Coldwater series may underlie the north end of the claim group.

WORK DONE: Linecutting, 12 miles of grid; magnetometer survey, 36 line-miles covering ES 1-34, 47, 48 and SA 3-6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 146; Assessment Report 4640.

CRAIGMONT MINE (92I/SE-35) (Fig. B, No. 203)

By David Smith

LOCATION: Lat. 50° 12.5′ Long. 120° 55.5′ (92I/2W)
NICOLA M.D. Eight miles northwest of Merritt, at the forks of Birkett Creek, between 3,800 and 4,200 feet elevation.

CLAIMS: Mineral Leases M-1 (McLEOD 7, 8), M-2 (MERRELL 5 to 8, McLEOD 1 to 6, AL 1 and 5 Fractions), M-7 (AL 3 FR.), M-10 to 12 (HEC 12, 13, and 14 Fractions), M-14 and 15 (MERCHANTS 7 and 8), M-16 (HEC 5 FR.), M-17 (NED 6), and 74 located claims including PAYSTIN, MERRELL, EDITH, PRICE, QUARTZITE, NED, etc. The Craigmont orebodies are located on the MERRELL 7 and 8 and McLEOD 5 and 6 claims.

OWNER: CRAIGMONT MINES LIMITED, 700, 1030 West Georgia Street, Vancouver; mine address, Box 3000, Merritt.

METALS: Copper, iron (production shown in Table I).

DESCRIPTION: The Craigmont orebodies are pyrometasomatic replacement deposits occurring mainly in a limy host rock lying within the thermal aureole of the Guichon Creek batholith.

WORK DONE:

Mining and milling were not continuous during the year due to a work stoppage by a strike which commenced on September 16 and lasted to year end.

Underground work consisted of 14,500 feet of trackless lateral development and 630 feet of raising. A total of 953 feet of diamond drilling for exploration purposes was completed during the year.

Copper concentrates were loaded at Coyle Siding and hauled by Canadian Pacific Railway to Vancouver for shipment to Japan. Shipments of magnetite were made to Kaiser's coal operation at Natal.

(92I/2W)

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 373; 1971, p. 292; 1972, pp. 146, 147.

JUA (92I/SE-171) (Fig. B, No. 113)

LOCATION: Lat. 50° 14′ Long. 120° 53′ (92I/2W)
NICOLA M.D. Six and one-half miles north of Lower Nicola, one-half mile west of Guichon Creek, straddling the Aberdeen road at approximately 3,500 feet elevation.

CLAIMS: JUA 1 to 28, 39 to 52.

OWNER: EXEL EXPLORATIONS LTD., 5, 6112 Willow Street, Vancouver.

METAL: Copper.

DESCRIPTION: Two holes drilled encountered quartz diorite of the Hybrid border phase of the Guichon Creek batholith. Sparse native copper was found in both holes.

WORK DONE: Approximately 27 line-miles of linecutting followed by a magnetometer survey on Jua 1-6, 23-29, and 39-52; surface diamond drilling, two holes, 885 feet and 286 feet in the vicinity of Jua 5.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 147; Assessment Report 4512.

JUA, LOST (Fig. B, No. 88)

LOCATION: Lat. 50° 15′ Long. 120° 52′ (92I/2W, 7W)
NICOLA M.D. Ten miles north-northwest of Merritt, at the confluence of Tyner and Guichon Creeks.

CLAIMS: JUA 29 to 38, LOST 1 to 3, 5, 7, 9 to 27, 29 to 32, GO 1, 3, 5, 7, 9, 11, 15, GO 1 and 2 Fractions.

OWNER: G. S. ELDRIDGE, 2907 West 42nd Avenue, Vancouver.

DESCRIPTION: Few outcrops occur on the property but those seen are quartz diorites of the Hybrid border phase of the Guichon Creek batholith. One outcrop with malachite-stained fractures was found on the road at the junction of Tolman and Guichon Creeks. A second outcrop 9,000 feet southward and 500 feet west of Guichon Creek contains minor chalcopyrite mineralization.

WORK DONE: Magnetometer and VLF EM surveys, approximately 28 line-miles covering GO 1 and 3.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 147; Assessment Reports 2410, 4329, 4473, 4501.

H (92I/SW-63, 64, 65) (Fig. B, No. 125)

LOCATION: Lat. 50° 03′ Long. 121° 38′ (92I/4E)
NEW WESTMINSTER and KAMLOOPS M.D. Twelve miles south-southwest of Lytton, 4 miles west of the Fraser River, between 5,300 and 5,500 feet elevation.

(92I/5E)

CLAIMS: H 1 to 24.

OWNERS: G. W. Hornby, E. B. Johnson, E. W. Hope, and A. Tsumura.

OPERATOR: HORNBY SYNDICATE, c/o G. W. Hornby, 4678 West 12th Avenue, Vancouver.

METALS: Nickel, talc.

DESCRIPTION: The claims overlie a segment of a narrow band of serpentinite which extends intermittently for 50 miles through Boston Bar and Jessica. It contains talc-carbonate zones on H 7, 9 and H 16, 18. The H 7, 9 zone is at least 300 feet wide and has a known strike length of 700 feet with a possible strike length in excess of 2,000 feet. Talc constitutes about 50 per cent of the rock, the balance being mainly carbonate, probably magnesite.

WORK DONE: Surface geological mapping, 1 inch equals 1,500 feet; nine rock samples taken for nickel assay which ranged from 0.12 per cent to 0.22 per cent.

REFERENCE: Assessment Report 4508.

B&B, SPIN (92I/SW-59, 61, 62) (Fig. B, No. 126)

LOCATION: Lat. 50° 21′ Long. 121° 38′ (92I/5E)
KAMLOOPS M.D. Ten miles north of Lytton, on the south and west slopes of Botanie Mountain, between 4,000 and 5,500 feet elevation.

CLAIMS: B&B 5 to 10, 17 to 20, 29 to 34, 57 to 76, FOLLY 1 to 8, SPIN 1 to 30, RERUN 1 to 4 Fractions.

OWNER: CANADIAN JOHNS-MANVILLE COMPANY LIMITED, 9, 219 Victoria Street, Kamloops.

METAL: Copper.

DESCRIPTION: The claims are underlain by diorite and quartz diorite of the Mount Lytton batholith which has intruded sedimentary units of the Cache Creek Group. Mineralization which includes quartz veins and mineralized fractures in the batholithic rocks comprises chalcopyrite and malachite.

WORK DONE: Geochemical survey, approximately 300 samples, 7 line-miles covering B&B 5 to 10.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 148; Assessment Report 4302.

AB (Fig. B, No. 124)

LOCATION: Lat. 50° 29′ Long. 121° 20′ (92I/6W)
KAMLOOPS M.D. Four miles north of Spences Bridge, 1.5 miles west of Martel on the Canadian National Railway, at approximately 4,500 feet elevation.

CLAIMS: AB 18 to 25.

OWNER: ANGLO-BOMARC MINES LTD., 301, 540 Burrard Street, Vancouver.

DESCRIPTION: The claims are underlain by volcanic rocks of the Cretaceous Spences Bridge Group.

WORK DONE: Trenching, 63 cubic yards on AB 22.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 149.

ALAMO, SAN JOSE (92I/SW-33, 20) (Fig. B, No. 118)

LOCATION: Lat. 50° 21' Long. 121° 00' (92I/6W, 7E)
KAMLOOPS M.D. Three miles northeast of the junction of Skuhun and Skuhost Creeks, at approximately 5,000 feet elevation.
CLAIMS: ALAMO and SAN JOSE, totalling 57.
OWNER: SAN JACINTO EXPLORATIONS LIMITED, 3513 West 31st Avenue, Vancouver.
METAL: Copper.
WORK DONE: 1972 — reconnaissance IP survey, three lines, 4,000 feet each on Alamo claims in the centre of the property.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 157; Assessment Report 4328.

EYE (92I/SW-19) (Fig. B, No. 122)

LOCATION: Lat. 50° 21' Long. 121° 08' (92I/6E)
KAMLOOPS M.D. Four miles east of Clapperton, on the east sides of Indian Reserves 12 and 13, at approximately 4,000 feet elevation.
CLAIMS: EGG 1 to 30, GK 1 to 22, 24 to 53, KG 34 to 37, LAST 1 to 12.
OWNER: J. L. Wilson.
OPERATOR: NEW CHIEF MINES LTD. (formerly Highland Chief Mines Ltd.), 1700, 777 Hornby Street, Vancouver.
METALS: Copper, molybdenum.
DESCRIPTION: The eastern part of the claim block covers a portion of the western contact of the Guichon Creek batholith with metamorphosed Nicola volcanic rocks. The western part is underlain by younger volcanic and sedimentary rocks of the Spences Bridge Group. The younger rocks unconformably overlie the batholithic and Nicola Group volcanic rocks.
WORK DONE: Linecutting and magnetometer survey, 29.4 line-miles; geochemical soil survey, 1,572 samples taken at 100-foot intervals on lines approximately 250 feet apart covering Egg 4, 6, 8-16, 19-24, KG 34-37, and GK 2, 4, 6, 8, 10, 12, 26-32, 35.
REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1958, p. 24 (EYE); *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 343 (TAM, BEN); Assessment Reports 2385, 2613, 3322, 4584.

MEL (Fig. B, No. 121)

LOCATION: Lat. 50° 24' Long. 121° 11' (92I/6E)
KAMLOOPS M.D. Three miles west of Pimainus Lake, on the south side of Pimainus Creek, at approximately 4,500 feet elevation.
CLAIMS: MEL 1, 2, 4, 6 to 10.

(92I/6E)

OWNER: ANGLO-BOMARC MINES LTD., 301, 540 Burrard Street, Vancouver.

DESCRIPTION: The claims apparently straddle the unconformable contact between volcanic flows and agglomerates of the Early Cretaceous Spences Bridge Group and quartz diorites of the border phase of the Late Triassic Guichon Creek batholith. The intrusive rocks underlie the eastern part of the claim group.

WORK DONE: Trenching, 91 cubic yards on Mel 4.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 149.

LAKEN (92I/SW-4) (Fig. B, No. 119)

LOCATION: Lat. 50° 25′ Long. 121° 06′ (92I/6E)
KAMLOOPS M.D. The property is centred 1 mile north-northwest of Pimainus Lake, at approximately 4,700 feet elevation.

CLAIMS: LAKEN 1 to 16, LAKE 1 to 10, SPOT 1 and 2, PLES 1 to 3.

OWNER: Decca Resources Limited.

OPERATORS: HOME OIL COMPANY LIMITED and DOME EXPLORATION (CANADA) LIMITED, 202, 850 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Much of the property is underlain by fresh Bethsaida granodiorite containing 7 to 10 per cent mafic minerals, mostly hornblende, trace biotite and muscovite, 2 to 3 per cent magnetite, and minor amounts of carbonate. Mineralization includes traces of pyrite and chalcopyrite.

WORK DONE: Percussion drilling, four holes totalling 1,360 feet on Laken 7 and 8.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 343.

LORNEX (92I/SW-45) (Fig. B, No. 117)

By E. Sadar

LOCATION: Lat. 50° 26.8′ Long. 121° 02.8′ (92I/6E)
KAMLOOPS M.D. Highland Valley, 2.5 miles south of Quiltanton Lake, at approximately 5,000 feet elevation.

CLAIMS: Mineral Leases M-48 to M-145 and other claims including AWARD, SKEENA COPPER, AM, LORNEX SOUTH, totalling approximately 460.

OWNER: LORNEX MINING CORPORATION LTD., Box 1500, Logan Lake.

METALS: Copper, molybdenum (production shown in Table I).

DESCRIPTION:

The porphyry-type orebody is located in the Guichon Creek batholith mainly within Skeena (Bethlehem) quartz diorite host rock adjacent to the Bethsaida quartz monzonite contact. The host rock has been intruded by pre-mineral quartz porphyry and aplite dykes. The mineralization generally consists of fracture fillings of quartz - chalcopyrite - bornite and molybdenite. Minor disseminations of chalcopyrite and bornite are also present, and minor sphalerite, galena, etc.

WORK DONE:

Mining is carried out by conventional open-pit mining methods with benches being developed on 40-foot intervals. Major mining equipment is as follows: three Bucyrus-Erie 45-R rotary drills; four P&H 2100-B, 15-cubic-yard electric shovels; one Bucyrus-Erie 280-B, 15-cubic-yard electric shovel; 23 Wabco 120-B, 120-ton haul trucks; and one Wabco 3200, 200-ton haul truck.

Twenty-five diamond-drill holes were completed during 1973 and three were currently underway on December 31. A total of 27,755 feet of drilling was completed. A minor amount of trenching was done on the property. One hundred and fifty line-miles of linecutting, 20.5 line-miles of IP surveying, and 12 line-miles of ground magnetometer surveying were completed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 150.

ROYAL, CANA (92I/SW-9) (Fig. B, No. 120)

By W. J. McMillan and G P.E. White

LOCATION: Lat. 50° 27' Long. 121° 05' (92I/6E)
KAMLOOPS M.D. The property is centred 1 mile southeast of Calling Lake, at approximately 5,500 feet elevation.

CLAIMS: ROYAL 2, 4, 6, 8, 10, 12 to 40, ROYAL A, B, C Fractions, CANA 9 and 10, RC 1 to 4.

OWNERS: Pan Ocean Oil Ltd. and Northlode Exploration Ltd.

OPERATOR: PAN OCEAN OIL LTD., 1050, 355 Fourth Avenue SW., Calgary, Alta.

METAL: Copper.

DESCRIPTION:

The claims are underlain primarily by quartz monzonites of the Bethsaida phase of the Guichon Creek batholith. However, locally in this area the quartz monzonites are cut by Mesozoic or Tertiary porphyry dykes.

Three holes were diamond drilled to test the property during 1973. Drill hole 1, on Royal 18 claim, was entirely in fault gouge which was probably derived from porphyry similar to that in hole 2. Drill hole 2, on Royal 18 claim (Fig. 14), encountered flow-banded sanidine - quartz - oligoclase porphyry near the top of the hole which graded downward into breccia consisting of porphyry and Bethsaida granodiorite clasts in a finely comminuted porphyry matrix. Drill hole 3, on Royal 37 claim, contains a biotite - sanidine - quartz - oligoclase porphyry dyke cutting Bethsaida granodiorite.

By comparison with similar-looking rocks which underlie Little OK Lake and outcrop in cuts along the Alwin mine road, the porphyries are inferred to be of Tertiary age. Speculatively, Sack Lake may be underlain by a small Tertiary plug similar to that underlying Little OK Lake. Conversely, perhaps a dyke occupies the linear between Sack and Calling Lakes.

WORK DONE: Surface diamond drilling, three holes totalling 685 feet on Royal 18 and 37.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 349, 350.

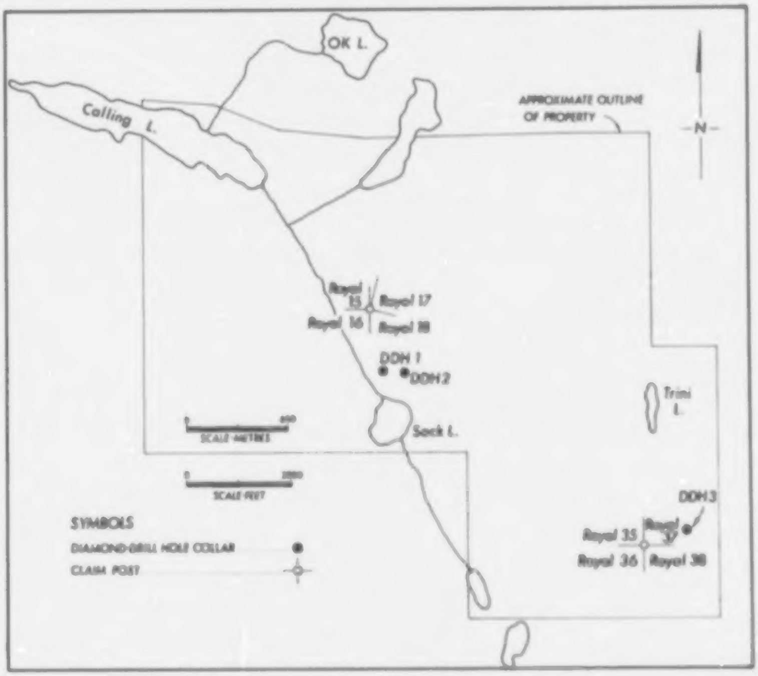

OK L.
Calling L.
APPROXIMATE OUTLINE OF PROPERTY
N
Royal 15
Royal 17
Royal 16
Royal 18
DDH 1
DDH 2
Sack L.
Trini L.
0
600
SCALE-METRES
0
2000
SCALE-FEET
SYMBOLS
DIAMOND-DRILL HOLE COLLAR
CLAIM POST
DDH 3
Royal 35
Royal 37
Royal 36
Royal 38

Figure 14. Royal claims – sketch map showing locations of diamond-drill holes.

BAR (92I/SW-16) (Fig. B, No. 123)

LOCATION: Lat. 50° 28′ Long. 121° 10′ (92I/6E)
KAMLOOPS M.D. Approximately 3 miles southwest of the OK mill, 14,000 feet due west of Calling Lake, between 4,600 and 5,300 feet elevation.

CLAIMS: BAR 1 to 40, BAR 1 to 3 Fractions.

OWNER: NORTHLODE EXPLORATION LTD., 32730 South Fraser Way, Abbotsford.

METAL: Copper.

DESCRIPTION: The claims are underlain by phases of the Guichon Creek batholith, Guichon granodiorite underlying the northeast third and hybrid quartz diorite the remainder. A gouge zone strikes northwest through the granodiorite near the contact. Three sets of mineralized fractures appear to be concentrated near the gouge zone. The mineralization consists of chalcopyrite and/or bornite fracture fillings or coatings, with malachite staining and alteration of wallrock to chlorite, biotite, and epidote. On Bar 39 a 20-foot wide shear zone carries chlorite, hematite, and minor chalcopyrite and malachite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 152; Assessment Report 4782.

OK (ALWIN) MINE (92I/SW-10) (Fig. B, No. 118)

LOCATION: Lat. 50° 28.7′ Long. 121° 06.0′ (92I/6E)
KAMLOOPS M.D. Highland Valley, 3 miles west of Quiltanton Lake, at approximately 5,400 feet elevation.

CLAIMS: OK (Lot 3644), APEX (Lot 3645), IOU (Lot 3643), OK 5 to 10, EZZ 12, 14, 19 to 22, PAL 1 to 3 Fractions, CALL 1 to 4, ALWIN 1 and 2 Fractions, FBI Fraction.

OWNER: D K Mining, Inc.

OPERATORS: D K MINING, INC. and INTERNATIONAL MINERALS & CHEMICALS CORP., 635 Sixth Avenue SW., Calgary, Alta. (former operator: OK Syndicate).

METALS: Copper, silver, gold, trace molybdenum.

DESCRIPTION: Chalcopyrite, bornite, and some chalcocite occur in two near-vertical sericitized shear zones. The main zone strikes 110 degrees, a lesser zone strikes 80 degrees.

WORK DONE: Underground geological mapping, 1 inch equals 20 feet; surface diamond drilling, two holes totalling 2,400 feet on OK (Lot 3644); underground diamond drilling, eight holes totalling 3,443 feet on OK (Lot 3644).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 155-157.

JAN (92I/SW-25) (Fig. B, No. 198)

LOCATION: Lat. 50° 29′ Long. 121° 09′ (92I/6E)
KAMLOOPS M.D. Highland Valley, west of Island Lake, on the north side of Inkikuh Creek.

CLAIMS: JAN 1 to 28.

OWNER: Canadian Centura Developments Ltd. (formerly Centura Industries & Resources Ltd.).

OPERATORS: K. and D. ROSS, c/o Penthouse, 1177 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims cover a segment of the contact between the Highland Valley and Hybrid phases of the Guichon Creek batholith.

WORK DONE: Linecutting and frequency-domain IP survey, 3.7 line-miles covering Jan 3-6 and 11-16.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 255; Assessment Report 4887.

FIN, LUCK (Fig. B, No. 110)

LOCATION: Lat. 50° 17′ Long. 120° 51′ (92I/7W)
NICOLA M.D. Adjoins Aberdeen mine on the south and lies on the west side of Guichon Creek, opposite and south of the mouth of Tolman Creek, at approximately 3,500 feet elevation.

CLAIMS: Approximately 24 FIN and 22 LUCK.

OWNER: Magnus Bratlien.

OPERATOR: RIO PLATA SILVER MINES LTD., 420, 475 Howe Street, Vancouver.

DESCRIPTION: Outcrops are rare on the property but it is underlain by granitic rocks of the Guichon Creek batholith.

WORK DONE: Three IP surveys, 20 line-miles covering Fin 9-24, 35-38 and LUCK 1, 2, and 11 to 28.

REFERENCES: Assessment Reports 4331, 4667, 4825.

CAPER, CAP (Fig. B, No. 108)

LOCATION: Lat. 50° 19′ Long. 120° 53′ (92I/7W)
NICOLA M.D. On Broom Creek, 3 miles south of the south end of Dot Lake, at approximately 4,000 feet elevation.

CLAIMS: CAPER 1 to 8, CAP 1 to 9, CAP Fraction.

OWNERS: H. H. Shear and D. F. Pasco.

(92I/7W)

OPERATOR: CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.

METAL: Copper.

DESCRIPTION: The claims are underlain mainly by granodiorite of the Chataway variety of the Highland Valley phase of the Guichon Creek batholith. Mineralization which includes malachite, chalcocite, and bornite occurs in fractures and shears.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet covering Caper 1, 2, 7, 8 and Cap 1, 2; surface diamond drilling, two holes totalling 899 feet on Cap 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 161.

MLM, GCM (92I/SE-65, 66, 151) (Fig. B, No. 111)

LOCATION: Lat. 50° 24′ Long. 120° 50′ (92I/7W)
NICOLA and KAMLOOPS M.D. On the west side of Mamit Lake, from 4 miles north of the lake to 2 miles south, between 3,200 and 4,400 feet elevation.

CLAIMS: Approximately 96 MLM, approximately 48 GCM, ED 1 to 5, DUDE 5 and 6, LEE 6.

OWNER: MAMIT LAKE MINING LTD., 303, 550 Burrard Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims cover the contact area between the eastern border of the Guichon Creek batholith and the Gump Lake granodiorite. A thin selvedge of metamorphosed Nicola Group volcanic and sedimentary rocks locally separates the intrusions.

WORK DONE: Linecutting, magnetometer survey, and VLF EM survey, 27.8 line-miles; geochemical soil survey, 1,300 samples taken at 100 by 200-foot grid spacing covering GCM 9, 24, 101-107, and 110-116.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 162; Assessment Report 4828.

FHK (Fig. B, No. 114)

LOCATION: Lat. 50° 26′ Long. 120° 48′ (92I/7W)
NICOLA M.D. Approximately 2.5 miles north of Mamit Lake, straddling the Mamit Lake road.

CLAIMS: FHK 1 to 10.

OWNER: EXEL EXPLORATIONS LTD., 5, 6112 Willow Street, Vancouver.

DESCRIPTION: Variations in magnetic patterns either side of the baseline, which closely follows the highway, suggest that the Guichon Creek batholith – Nicola Group volcanic contact strikes northerly and is just east of the baseline. Deep glacial overburden prevents direct observation of this contact.

WORK DONE: Linecutting and magnetometer survey, 12 line-miles.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 168; Assessment Report 4512.

GAP (GAZA) (92I/SE-70) (Fig. B, No. 212)

LOCATION: Lat. 50° 26.5′ Long. 120° 55.5′ (92I/7W)
KAMLOOPS M.D. The property is reached via a branch road off the Highland Valley road 7 miles east of Quiltanton Lake.
CLAIMS: GAP, JERICHO, BOB, GEM, STIBBARD, JC, MARK, NAT, FARGO, BUD, HATCH, JAMES, JIM, GNAT, WENDY, totalling approximately 200.
OWNER: Highmont Mining Corp. Ltd.
OPERATORS: HIGHMONT MINING CORP. LTD. and TECK MINING GROUP LIMITED, 700, 1177 West Hastings Street, Vancouver V6E 2K5.
METALS: Copper, molybdenum.
DESCRIPTION: Mineralization consisting of bornite, chalcopyrite, and molybdenite occurs in stockworks and locally in disseminations in quartz diorite.
WORK DONE: Surface diamond drilling, seven holes totalling 2,289 feet.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 169.

SHEBA (92I/SE-10, 76, 81, 152) (Fig. B, No. 109)

By W. J. McMillan

LOCATION: Lat. 50° 27′ Long. 120° 58′ (92I/7W)
KAMLOOPS M.D. On the east and north slopes of Gnawed Mountain, between 4,000 and 5,500 feet elevation.
CLAIMS: SHEBA 21 to 26, JAY 9 to 20, 101, JAY 104 Fraction, JJ 1 and 2 Fractions, DEE 1 and 3 Fractions, DO 1 to 6, DO 1 to 8 Fractions, LYNN 1 to 8, LYNN 7 and 10 Fractions, DAWN 1 to 8, ANN 1, 2, 5, 6, and 14 to 17 Fractions, VI 1 Fraction, J 1 to 8, 31, 32, 41, 42, J 33 to 38 and 40 Fractions, CU 1 to 6, 17 to 20, CS 1 and 3, CS 1 Fraction.
OWNER: Saba Copper Mines Limited.
OPERATOR: THE DOWA MINING CO., LTD., 1101, 1111 West Hastings Street, Vancouver.
METALS: Copper, molybdenum.
DESCRIPTION:

Seven holes were drilled in 1973 with an aggregate length of 5,373 feet on the Sheba prospect. Their locations are detailed on Figure 15. Holes 1, 2, 3, 6, and 7 were drilled to test geophysical anomalies whereas holes 4 and 5 probed for an extension of mineralization encountered in an earlier percussion drill hole.

Mineralization is widely dispersed on the Sheba property but very low grade. Copper and molybdenite minerals occur in veins and along fractures in association with quartz, calcite, epidote, and chlorite. Argillic and sericitic alteration occurs locally and is sometimes associated with ore minerals, but weak propylitic alteration is the most common type developed.

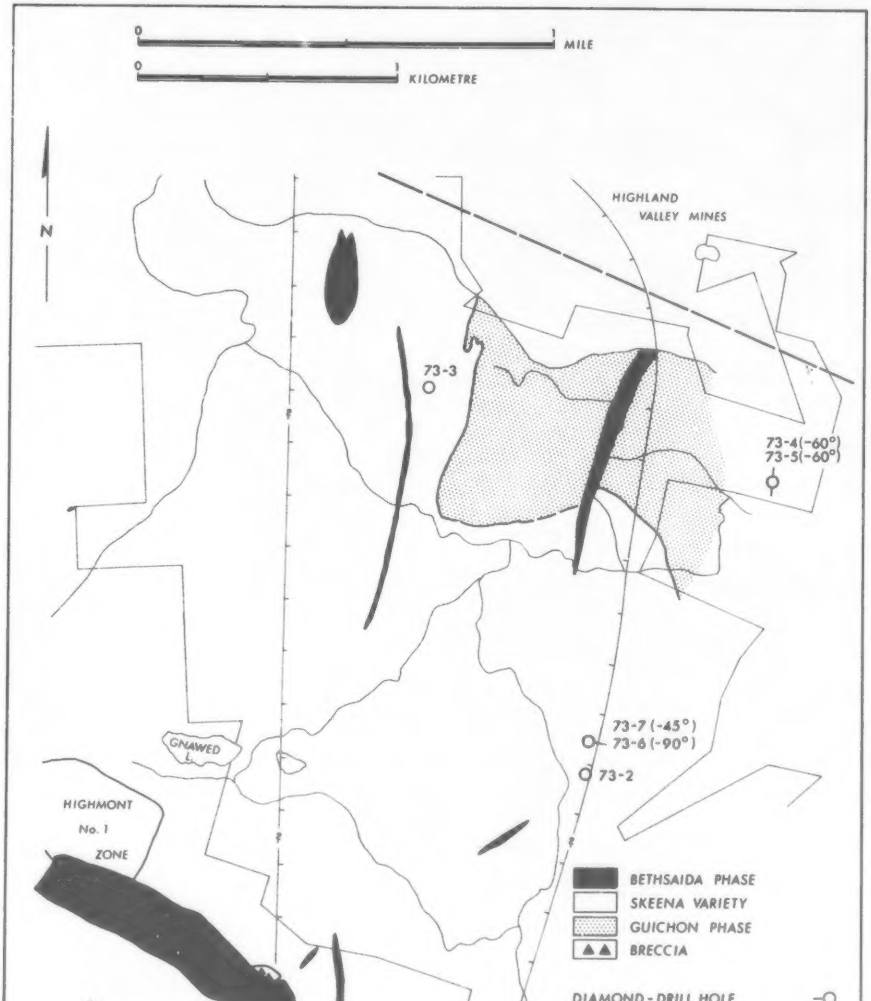

0
1
MILE
0
1
KILOMETRE
N
HIGHLAND VALLEY MINES
73-3
73-4(-60°)
73-5(-60°)
73-7 (-45°)
73-6 (-90°)
73-2
GNAWED L.
HIGHMONT No. 1 ZONE
73-1
BETHSAIDA PHASE
SKEENA VARIETY
GUICHON PHASE
BRECCIA
DIAMOND-DRILL HOLE
DYKE SWARM AREA
FAULT

Figure 15. Geological map of the Sheba property, showing locations of 1973 drill holes.

Drill hole 1 pierced local argillic, sericitic, and propylitic alteration zones in Skeena quartz diorite country rock, but little copper mineralization. Tertiary andesite dykes were cut from 562 to 588 and 716 to 736. The Skeena quartz diorite country rock of hole 2 is locally propylitized and sericitized. Pink zeolite veins are common. A zone from 640 to 680 feet runs better than 0.5 per cent copper but elsewhere grades are very low. Bornite is the dominant copper mineral present. Alteration and rock type in drill hole 3 are similar to those in 2 but mineralization is sparse. A gouge zone occurs from 500 to 575 feet. Holes 4 and 5 cut quartz diorites of the Highland Valley phase. No mineralization was seen but hole 5 displays mild propylitic alteration. Holes 6 and 7 cut Skeena quartz diorite which is sparsely mineralized. Hole 6 is weakly propylitized but hole 7 is strongly propylitized.

WORK DONE: Surface diamond drilling, seven holes totalling 5,373 feet on CU 18, DO 4, J 33 Fraction, Sheba 25, and DO 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 163-167.

IND (92I/SE-172) (Fig. B, No. 204)

LOCATION: Lat. 50° 27.5' Long. 120° 55' (92I/7W)
KAMLOOPS M.D. In the Highland Valley, covering Indian Reserve 15, at approximately 3,800 feet elevation.

CLAIMS: IND 1 to 3, 5 to 9, IND 4, 10 to 13 Fractions.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

METAL: Copper.

DESCRIPTION:

Due to a complete lack of rock exposure, the geology can only be inferred from diamond drilling carried out on the property, and from existing geological maps of the surrounding properties. The main rock type underlying the claims is a medium to coarse-grained, light grey quartz diorite, with 15 to 20 per cent biotite and hornblende mafic minerals. It is locally called Guichon quartz diorite.

A quartz-feldspar porphyry dyke which was intersected in hole 14S-189E is the only other rock type seen on the property. The dyke itself is weakly mineralized with bornite replacing mafic minerals, but the mineralization does not extend into the surrounding rock.

Alteration minerals are chlorite, epidote, sericite, and carbonates. Stronger alteration is apparently associated with fault zones while the remaining rock is rather fresh.

Faulting on the property appears to be more intense in the west and central parts. However, because of limited drilling in the area, it is very difficult at the present time to correlate these faults.

WORK DONE: Surface diamond drilling, five holes totalling 3,442 feet on IND 1, 3, 5, and 8 and IND 11 Fraction; rotary drilling, two holes totalling 995 feet on IND 3 and 5; claims mapped, 1 inch equals 400 feet.

NYE (92I/SE-148) (Fig. B, No. 112)

LOCATION: Lat. 50° 28' Long. 120° 51' (92I/7W)
KAMLOOPS M.D. On the south side of Witches Brook, 2 miles northeast of Gump Lake, at approximately 4,000 feet elevation.

CLAIMS: NYE 1 to 12, 15 to 23, RHODA 1 to 5, HK 1, SEX 1 and 2 Fractions, COOL 1 to 6.

OWNER: ROCKY MOUNTAIN TRENCH MINES LTD., 407, 470 Granville Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are crossed by the eastern contact of the Guichon Creek batholith with schists and gneisses of the Late Triassic Nicola Group.

WORK DONE: Geochemical soil survey, 1,100 samples taken at 100 by 200-foot grid spacing; magnetometer and VLF EM survey, 21 line-miles (follow up of previous reconnaissance surveys) covering Nye 2-7 and Rhoda 1-5.

REFERENCES: Assessment Reports 3453, 4845.

JOE, BET (Fig. B, No. 205)

LOCATION: Lat. 50° 28' Long. 120° 56.5' (92I/7W)
KAMLOOPS M.D. In the Highland Valley, bordering Indian Reserve 14 on the south and Indian Reserve 15 on the north, at approximately 3,800 feet elevation.

CLAIMS: JOE 1 to 8, BET 1 to 5, JEAN 1 Fraction.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

DESCRIPTION:

The main rock types underlying the property are the Guichon and Chataway quartz diorites. The Guichon quartz diorite occupies the central and eastern parts of the property, and the Chataway is confined to the western part.

These rocks are generally fresh in appearance, light grey to cream grey, usually mottled by pink, fine to medium grained, with euhedral to subhedral black to dark green mafic minerals.

The Chataway variety has been locally intruded by a pink quartz-feldspar porphyry dyke, similar in texture and composition to dykes occurring in the east wall of the Jersey pit.

Chlorite alteration is commonly developed along fractures. Sericite was mostly seen in, or adjacent to, fault zones. Epidote alteration is generally weak and occurs as a replacement of mafic minerals.

WORK DONE: Surface diamond drilling, four holes totalling 3,136 feet on Bet 1, 2, 4, and Joe 4; rotary drilling, one hole totalling 812 feet on Joe 4; claims surveyed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 256.

BETHLEHEM MINE (92I/SE-1, 2, 3, 4, 6) (Fig. B, No. 199)

By E. Sadar

LOCATION: Lat. 50° 29.5′ Long. 120° 59′ (92I/7W)
KAMLOOPS M.D. On the north side of Highland Valley, 2 miles east of Quiltanton Lake.

CLAIMS: The company owns 56 Crown-granted and 372 located mineral claims and fractions and controls another 14 located claims through agreement.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8; mine address, Box 520, Ashcroft V0K 1A0.

METAL: Copper (production shown on Table I).

DESCRIPTION: The two main orebodies, the Jersey and the Huestis, lie across the contact of the Guichon and Bethlehem quartz diorites. Mineralization (mainly chalcopyrite and bornite) is present as fracture fillings and disseminations. A drilling programme is at present underway on the Iona zone which is a breccia zone near the above-mentioned contact.

WORK DONE:

The mine continued to work on a three-shift basis with production coming mostly from the Huestis pit, with minor tonnages from the Jersey and Iona.

Major mine equipment in service includes twenty-two 50-ton haulage units, three Bucyrus-Erie 88-B 5½-yard capacity shovels, four Michigan 475 12-yard capacity front-end loaders, two Bucyrus-Erie 45-R rotary drills, three D-8 tractor bulldozers, two Caterpillar 824 rubber-tired bulldozers, and two model 14-E motor graders.

Concentrator throughput for 1973 averaged 17,367 tons per calendar day.

Exploratory investigations were carried out on both the Jersey and Iona zones.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 170, 171.

KR&K (CHARTRAND CREEK) (Fig. B, No. 115)

LOCATION: Lat. 50° 30′ Long. 120° 49′ (92I/7W)
KAMLOOPS M.D. On Chartrand Creek between the Four Corners and Logan Lake townsite extending south of the highway and south of Logan Lake.

CLAIMS: KR&K 1, 2, 9 to 21, 23 to 38.

OWNER: NICOLA COPPER MINES LTD., 9897 – 138A Street, Surrey.

DESCRIPTION: The property is underlain by rocks of the Late Triassic Nicola Group just eat of the contact with the Guichon Creek batholith.

WORK DONE: VLF EM survey, 18.5 line-miles covering KR&K 1, 2, 9-20, which are the claims south of the highway and south of Logan Lake.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 180; Assessment Report 4332.

SA (92I/SE-167) (Fig. B, No. 107)

LOCATION: Lat. 50° 28′ Long. 120° 46′ (92I/7)
KAMLOOPS M.D. Two and one-half miles southeast of Logan Lake, at approximately 4,300 feet elevation.

CLAIMS: SA, totalling 136.

OWNERS: Western Copper Mines Ltd. and Patrick Shea.

OPERATOR: WESTERN COPPER MINES LTD., 1151 Hornby Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain by a conformable succession of volcanic conglomerate, breccia, greywacke, amygdaloidal basalt, andesite, and limestone. Flows are subordinate. The succession is nearly flat lying. Stringers and disseminations of chalcocite, bornite, and rarely chalcopyrite occur in highly fractures, malachite-stained, rusty weathering Nicola limestone (?) on SA 108.

WORK DONE: During the latter part of 1972, a magnetometer survey was conducted over approximately 17 miles of grid on the north-central claims and several holes totalling 100 feet were percussion drilled on SA 108.

REFERENCE: Assessment Report 4413.

EDEN, EZRA (Fig. B, No. 147)

LOCATION: Lat. 50° 30′ Long. 120° 54′ (92I/7W, 10W)
KAMLOOPS M.D. Highland Valley, 4 miles east of the Bethlehem mine.

CLAIMS: EDEN 1 to 20, EZRA 1 to 20, JOB 1 to 4, 14, CL 60 to 69, INDIAN 1 and 2 Fractions.

OWNER: D. R. Foster.

OPERATOR: AZURE RESOURCES LTD. (formerly NEW INDIAN MINES LTD.), 422, 355 Burrard Street, Vancouver.

DESCRIPTION: The property is underlain by leucocratic granodiorite which is generally unaltered and massive. In the north half of Eden 2 claim the granodiorite is silicified and appears to be more fractured.

WORK DONE: Reconnaissance geological and magnetometer surveys, 15.7 line-miles covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 251, 252; Assessment Report 4321.

LYN, KAY (Fig. B, No. 103)

LOCATION: Lat. 50° 16′ Long. 120° 41′ (92I/7E)
NICOLA M.D. Twelve miles north-northwest of Merritt, surrounding Revelle and Hensell Lakes, between 4,700 and 5,400 feet elevation.

CLAIMS: LYN 1 to 4, 11, 12, 32 to 40, 44 to 59, 78 to 81, 83, KAY 1, 20, 30, 40.

OWNER: G. Milburn.

OPERATOR: HESCA RESOURCES CORPORATION LIMITED, 101, 325 Howe Street, Vancouver.

(92I/7E)

WORK DONE: 1972 – reconnaissance geochemical survey, 160 soil and silt samples and 21 rock chip samples taken from three small grids aggregating 4 line-miles and from scattered lines; 1973 – 8 line-miles of new grid was established and 210 soil samples taken from it at 200 by 1,000-foot spacing.

REFERENCE: Assessment Report 4503.

LEO (Fig. B, No. 104)

LOCATION: Lat. 50° 20' Long. 120° 40' (92I/7E)
NICOLA M.D. Six and one-half miles east-southeast of Mamit Lake, 1 mile northwest of Helmer Lake, at approximately 4,500 feet elevation.

CLAIMS: LEO 1 to 25.

OWNER: E. O. Chisholm.

OPERATOR: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.

DESCRIPTION: The claims are underlain by volcanic rocks of the Nicola Group and possibly by younger granitic rocks.

WORK DONE: IP survey, 10 line-miles; magnetomter survey, 8.1 line-miles; aeromagnetic, EM, and VLF EM survey, 3.4 line-miles; surface diamond drilling, two holes totalling 746 feet on Leo 7 and 11.

REFERENCE: Assessment Report 4765.

REY (92I/SE-160) (Fig. B, No. 100)

By W. J. McMillan

LOCATION: Lat. 50° 20' Long. 120° 42' (92I/7E)
NICOLA M.D. Sixteen miles north-northeast of Merritt, surrounding Rey Lake, at approximately 4,400 feet elevation.

CLAIMS: REY, totalling approximately 185.

OWNERS: W. A. Dexter, C. L. Bourgh, Lloyd Woodman.

OPERATOR: AMERICAN SMELTING AND REFINING COMPANY, 504, 535 Thurlow Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION:

GENERAL GEOLOGY: The Rey property occurs within a belt of volcanic and sedimentary rocks which have been correlated with rocks of the Nicola Group (Cockfield, 1948) which is of Triassic and possibly partly Jurassic age. North of Nicola Lake and south of Kamloops Lake, this belt of rocks is bounded by the Guichon Creek batholith on the west and the Nicola batholith on the east. Copper showings in it are generally of the vein type although occasionally tops of lava flows are mineralized. The Rey showing is unusual because it occurs in a breccia zone adjacent to a small quartz monzonite stock. The stock was not discovered during 4-mile mapping conducted by Cockfield.

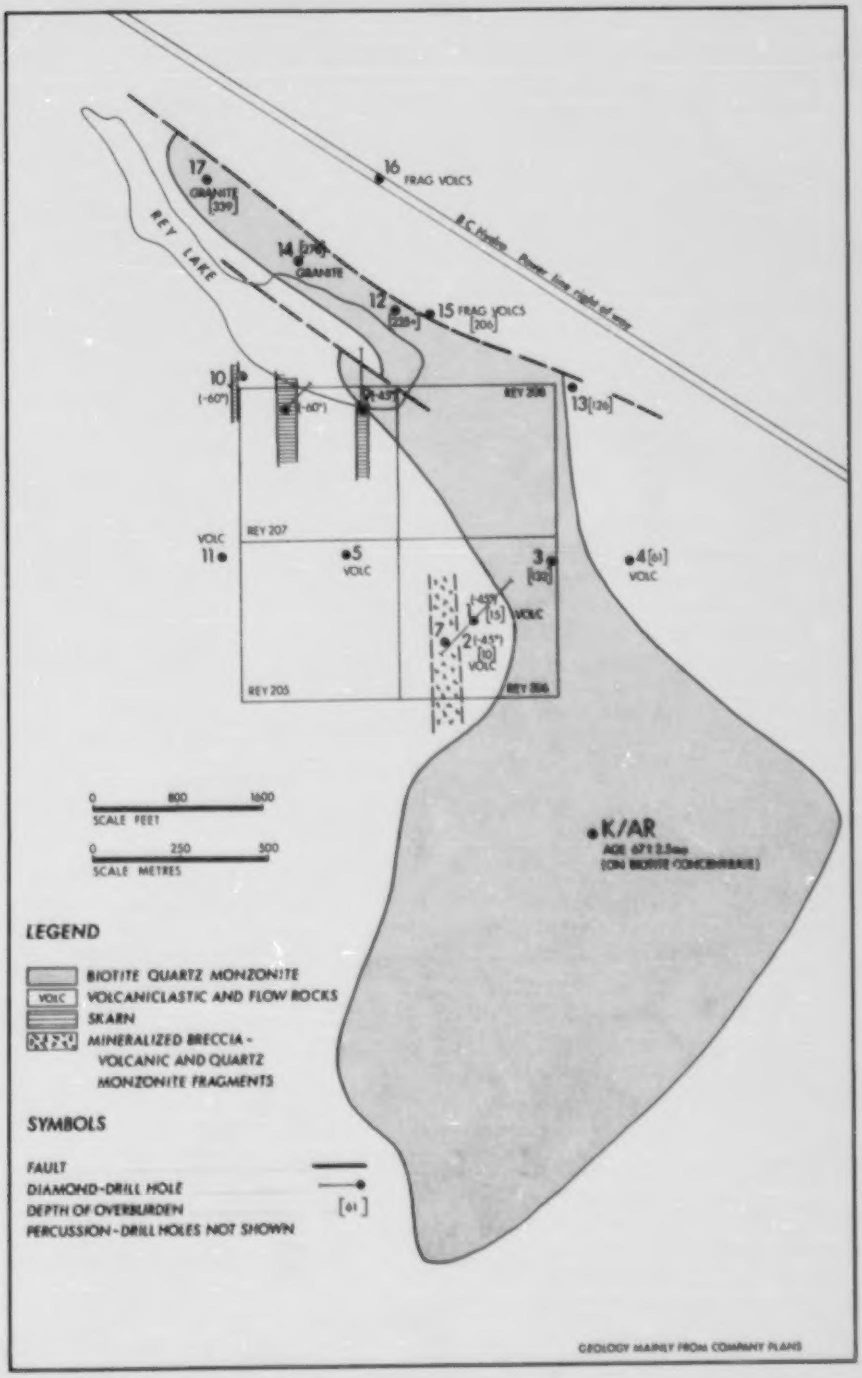

17
GRANITE
[339]
14 [278]
GRANITE
12
[228+]
15 FRAG VOLCS
[206]
16 FRAG VOLCS
B.C. Hydro Power line right of way
REY LAKE
10
(-60°)
(-60°)
(-45°)
REY 208
13 [120]
REY 207
VOLC
11
5
VOLC
3
[132]
4 [61]
VOLC
(-45°)
1
[15]
VOLC
7
2 (-45°)
[10]
VOLC
REY 205
REY 206
0
800
1600
SCALE FEET
0
250
500
SCALE METRES
K/AR
AGE 67 ± 2.5 ma
(ON BIOTITE CONCENTRATE)
LEGEND
BIOTITE QUARTZ MONZONITE
VOLC
VOLCANICLASTIC AND FLOW ROCKS
SKARN
MINERALIZED BRECCIA - VOLCANIC AND QUARTZ MONZONITE FRAGMENTS
SYMBOLS
FAULT
DIAMOND-DRILL HOLE
DEPTH OF OVERBURDEN
[61]
PERCUSSION-DRILL HOLES NOT SHOWN
GEOLOGY MAINLY FROM COMPANY PLANS

Figure 16. Rey property – plan showing geology and location of diamond-drill holes.

LOCAL GEOLOGY: The country rock on the periphery of the quartz monzonite stock consists mainly of volcanic flows, fine-grained volcaniclastic rocks, and pyroclastic (?) rocks with a few skarn zones derived from siliceous limestone layers. A few thousand feet west of the stock are shales, limestones, arenites, and pebble to cobble conglomerates which comprise a zone at least several hundred feet wide. Beds strike north and dips are steep. The stock outline is conformable with bedding south of Rey Lake but is elongated northwestward parallel to the valley of Rey Lake in the north (Fig. 16).

PETROLOGY: Rocks of the stock are characteristically porphyritic, consisting of biotite, quartz, and plagioclase (mainly oligoclase) phenocrysts in a matrix rich in quartz, plagioclase, and K-feldspar. K-feldspar phenocrysts occur rarely and are anhedral and partially resorbed. Plagioclase crystals have average composition near An_{20} (oligoclase) but are zoned. Apatite and sphene are typical accessory minerals. Disseminated pyrite is ubiquitous whereas chalcopyrite and molybdenite are comparatively uncommon.

Feldspars may be fresh or variably altered chalky white crystals composed principally of sericite, calcite, and albite (?). Biotite phenocrysts may be fresh but typically are partially chloritized. Veins of quartz, calcite, calcite - plagioclase - quartz, quartz - calcite - pyrite, and pyrite were noted. In one specimen, euhedral quartz, sphene, and apatite crystals fill what appear to have been miarolitic cavities.

The apparent control of part of the outline of the stock by regional bedding and the presence of infilled miarolitic cavities suggest the stock was emplaced at a high level in the crust. The apparent influence of regional structures as well as bedding further suggests that the stock was emplaced after the beds were rotated to their present dip. A K/Ar age date of 67±2.5 m.y. was obtained from a fresh biotite concentrate from the quartz monzonite (Fig. 16). This Late Cretaceous age strengthens the inference that the stock was emplaced at a high level in the crust.

METAMORPHISM ADJACENT TO THE STOCK: The mineralogy of rocks in drill core adjacent to the stock indicates contact metamorphic conditions of the albite - epidote - hornfels facies. However, several specimens containing mineral assemblages typical of the hornblende - hornfels facies were found.

In metamorphosed basic volcanic rocks, groundmass is variably converted to felted biotite with some chlorite and actinolite. Plagioclase phenocrysts are normally altered to albite, biotite, sericite, and calcite but are locally converted to actinolite, albite, and quartz. In metamorphosed calcareous tuffs or skarns, where metamorphic grade was apparently higher, mineral assemblages include calcic plagioclase, garnet, diopside, calcite, and rarely remnants of epidote crystals. The mineral assemblages suggest that temperatures were in the range of 450 to 550 degrees centigrade, adjacent to the stock (Winkler, 1967, p. 79). The higher grade assemblages probably represent zones where porosity and permeability were higher in the country rock.

MINERALIZATION: Mineralization occurs in three forms: disseminated in the quartz monzonite stock; in veinlets in the stock and country rocks; and in a breccia zone as veinlets and disseminations in breccia fragments. Pyrite is the dominant sulphide with lesser chalcopyrite and some molybdenite. Quartz and calcite with K-feldspar and zeolite are the dominant non-metallic minerals.

Veins have diverse mineralogy and comprise several generations. The following examples illustrate the complexity: quartz - K-feldspar - calcite - pyrite - chalcopyrite veins with sericite - chlorite envelopes are cut by similar veins which lack K-feldspar; calcite - pyrite - chalcopyrite - molybdenite ± quartz veins are cut by quartz - pyrite veins with biotite-rich selvages and by calcite - zeolite (stilbite) veins; some quartz - feldspar veins predate brecciation although most postdate it. Other minerals which occur in veins either alone or in combination with other minerals are actinolite, epidote, chlorite, sericite, biotite, plagioclase, and zoisite.

What appears to be the latest generation of veins contain zeolite with or without calcite. These veins clearly crosscut veins lacking zeolite, however, some zeolite-bearing veins contain chlorite and/or pyrite or sericite. Zeolite and calcite form cores to some quartz - calcite veins where they are intimately associated with sulphides. These data suggest the zeolites are a late stage part of the mineralizing process rather than being much younger features.

Veins in the quartz monzonite stock are mineralogically simpler than those in the country rock. Most contain quartz and calcite with sulphides and lesser amounts of plagioclase. Some contain actinolite.

The origin of the mineralized breccia zone is enigmatic. The zone contains both granitic and volcanic fragments, although volcanic fragments seem to predominate. The matrix is very fine and seems to consist of comminuted rather than coherent intrusive material. The breccia may predate the stock but clearly some post-stock brecciation is necessary to account for angular granitic fragments and pre-breccia veins within it. Because the breccia is interpreted by American Smelting and Refining Company geologists to strike northward and dip steeply subparallel to regional bedding, it is possible that channelling of volatiles along a fractured, dyked bed produced the breccia. Crystallization of the stock is a likely source of both the volatiles and attendant sulphide mineralization.

The economic potential of the deposit is limited according to American Smelting and Refining Company's drill results. However, one hole drilled down the breccia zone returned several hundred feet of about 0.5 per cent copper.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims; surface diamond drilling, 12 holes totalling 5,622 feet; percussion drilling, 39 holes totalling 9,040 feet; road construction, approximately 12 miles; trenching, 160 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 181; Assessment Report 4846; Cockfield, W. E. (1948), *Geol. Surv., Canada,* Mem. 249; Winkler, H.G.F. (1967), Petrogenesis of Metamorphic Rocks (revised second edition), *Springer-Verlag New York Inc.*

POM POM (92I/SE-170) (Fig. B, No. 99)

LOCATION: Lat. 50° 25′ Long. 120° 43′ (92I/7E)
NICOLA M.D. Four and one-half miles east-northeast of the north end of Mamit Lake, on the south side of Quenville Creek, at approximately 4,350 feet elevation.

(92I/7E)

CLAIMS: POM POM 1 to 20.

OWNER: S. W. Barclay.

OPERATOR: NEWMONT MINING CORPORATION OF CANADA LIMITED, 1230, 355 Burrard Street, Vancouver V6C 2G8.

METAL: Copper.

DESCRIPTION: The claims are underlain by a microdiorite dyke which intrudes grey-green and purple andesitic tuffs, flows, and breccias of the Nicola Group. Chalcopyrite and bornite occur in the dyke as fracture-controlled mineralization, accompanied by epidote-calcite and hematite alteration. Grade is low and showing is restricted.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering parts of Pom Pom 15, 4, 8, 9; IP survey, 1 line-mile covering Pom Pom 15, 4, and part of 9; magnetometer survey, 1 line-mile covering part of Pom Pom 15, 4; geochemical soil survey, 58 samples, 1.5 line-miles covering part of Pom Pom 15, 4; stripping, 100 square feet on Pom Pom 15.

MAX (Fig. B, No. 106)

LOCATION: Lat. 50° 28′ Long. 120° 34′ (92I/7E)
KAMLOOPS M.D. Three miles west of Lac Le Jeune, on Melba Creek, between 4,000 and 4,300 feet elevation.

CLAIMS: MAX 1 to 20.

OWNER: HOST VENTURES LTD., 534, 789 West Pender Street, Vancouver.

WORK DONE: Magnetometer survey, 11 line-miles covering Max 3-20.

REFERENCE: Assessment Report 4334.

KR&K (GREENSTONE CREEK) (Fig. B, No. 101)

LOCATION: Lat. 50° 28′ Long. 120° 42′ (92I/7E)
KAMLOOPS M.D. On the north side of Meadow Creek, at Greenstone Creek, at approximately 3,400 feet elevation.

CLAIMS: KR&K 200 to 211.

OWNER: NICOLA COPPER MINES LTD., 9897 – 138A Street, Surrey.

DESCRIPTION: The property is underlain entirely by Nicola Group volcanic rocks.

WORK DONE: VLF EM survey, 10 line-miles; SP survey, 1 line-mile; geochemical soil survey, approximately 600 samples taken at 50 and 100-foot by 200-foot grid spacing covering KR&K 200-205, 208.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 184; Assessment Reports 4499, 4793.

KR&K (WALLOPER LAKE) (Fig. B, No. 102)

LOCATION: Lat. 50° 29′ Long. 120° 31′ (92I/7E)
KAMLOOPS M.D. One mile northwest of Lac Le Jeune, surrounding Walloper Lake, between 4,300 and 4,600 feet elevation.

(92I/7E)

CLAIMS: KR&K 135 to 148, 163 to 168, 300 to 310, GH 1 and 2.

OWNER: NICOLA COPPER MINES LTD., 9897 – 138A Street, Surrey.

DESCRIPTION: The property is underlain entirely by Nicola Group volcanic rocks.

WORK DONE: VLF EM survey, approximately 19 line-miles covering KR&K 135-137, 302-310, and GH 1 and 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 323; Assessment Report 4333.

HH (Fig. B, No. 105)

LOCATION: Lat. 50° 29′ Long. 120° 42′ (92I/7E)
KAMLOOPS M.D. One mile north of Meadow Creek, on the west side of Greenstone Creek, between 4,000 and 4,500 feet elevation.

CLAIMS: HH 1 to 4.

OWNER: MUNDEE MINES LTD., 301, 540 Burrard Street, Vancouver V6C 2K3.

DESCRIPTION: The property is underlain by volcanic rocks of the Upper Triassic Nicola Group; Upper Triassic granitic rocks of the Guichon Creek batholith lie 5 miles due west of the property.

WORK DONE: Geochemical survey, 105 samples, 4 line-miles covering HH 1-4.

REFERENCE: Assessment Report 4576.

FORD (92I/SE-9) (Fig. B, No. 213)

By W. J. McMillan

LOCATION: Lat. 50° 29′ Long. 120° 44′ (92I/7E)
KAMLOOPS M.D. The showings are 3.5 miles east of Logan Lake adjoining the highway on the north.

CLAIMS: HW 3 to 5, JG 1 to 32.

OWNERS: Nicola Copper Mines Ltd. and H. W. Wiggins.

OPERATOR: NICOLA COPPER MINES LTD., 9897 – 138A Street, Surrey.

METALS: Copper, silver.

DESCRIPTION:

LOCAL GEOLOGY AND MINERALIZATION: The site of an old adit and trenches, as well as the present drilling (Fig. 17) is underlain by dark grey, purplish red, porphyritic amygdaloidal flows of the Late Triassic Nicola Group. The lavas are typically amygdaloidal and vary in composition from 'olivine' basalt to augite andesitic basalt. The olivine is now a pseudomorphous mixture of iddingsite, serpentinite (?), and carbonate. Plagioclase in the rock has been albitized and now ranges in composition from albite to oligoclase. Locally it is shot through with sericite and epidote, or has been subjected to propylitic alteration. Pyroxene is generally fresh but is commonly altered along cracks to epidote, zoisite, and calcite with or without chlorite.

The old adit, which is about 40 feet long, follows a mineralized shear zone striking north 40 degrees east into the hillside. An east-west set of faults is also exposed in the adit. Up the hill, a trench was blasted into the lavas. It is roughly 10 feet wide and 50 feet long. Thirty tons of material which was shipped from the adit dump and the open cut in 1929 assayed: silver, 0.3 ounce per ton and copper, 2.14 per cent.

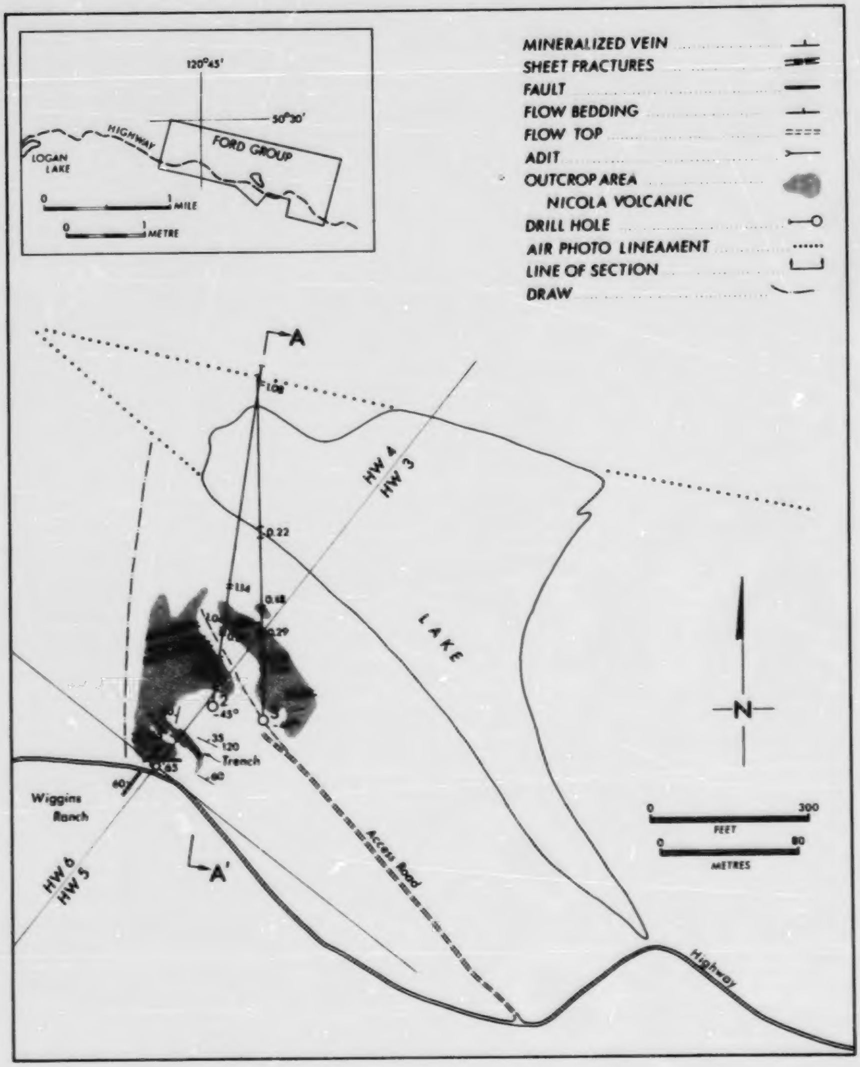

MINERALIZED VEIN
SHEET FRACTURES
FAULT
FLOW BEDDING
FLOW TOP
ADIT
OUTCROP AREA
NICOLA VOLCANIC
DRILL HOLE
AIR PHOTO LINEAMENT
LINE OF SECTION
DRAW
120°45'
50°30'
HIGHWAY
FORD GROUP
LOGAN LAKE
0
1 MILE
0
1 METRE
A
A'
1.08
0.22
1.14
0.48
0.29
2
-43°
3
35
120
Trench
60
65
60
HW 4
HW 3
HW 6
HW 5
LAKE
Wiggins Ranch
Access Road
Highway
N
0
300
FEET
0
80
METRES

Figure 17. Ford property – geological map of the HW 3 to 6 claims.

About 100 feet of section is exposed between the adit and the drill sites (Fig. 17). Zones enriched in amygdules (Plates IIIA and IIIB) distinguish tops of flows and suggest that individual flows average between 5 and 7 feet in thickness. The flows strike north 50 degrees west and dip 30 degrees northeastward into the hillside. Within the section examined, virtually all the flow tops contain some mineralization in amygdules and associated veins (Fig. 18). Chalcocite (?) and bornite are the predominant copper minerals but malachite commonly occurs in and near the mineralized amygdules. Gangue minerals include chlorite, sericite, clinozoisite, zeolite, and calcite. Some mineralization also occurs in calcite veins, calcite - epidote - sericite veins, sericite - zoisite veins, and chlorite veins. Carbonate - zeolite veins are barren. Only assay results from drill holes 2 and 3 were released to trade journals by the company. The assays show local sections a few feet long of 0.22 to 2.8 per cent copper. The locations of mineralized sections are depicted on Figures 17 and 18.

WORK DONE: Three diamond-drill holes with aggregate length about 2,500 feet were drilled on HW 4 to test for extensions of the old Ford workings.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1929, p. 228; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 158; *Geol. Surv., Canada,* Mem. 249, 1948, p. 126.

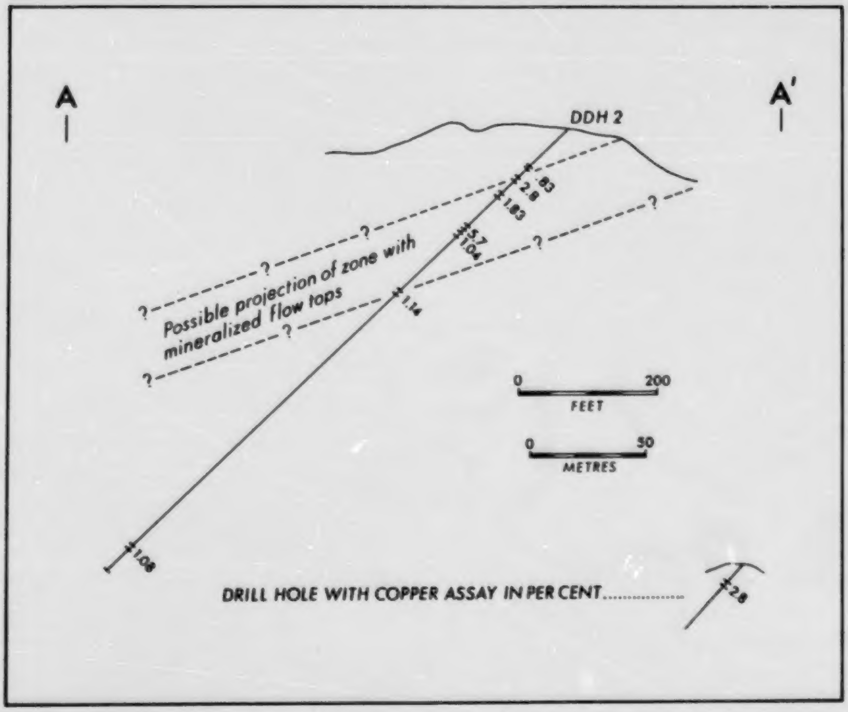

A
A'
DDH 2
.83
2.8
1.83
5.7
1.04
1.14
1.08
?
Possible projection of zone with mineralized flow tops
0
200
FEET
0
50
METRES
DRILL HOLE WITH COPPER ASSAY IN PER CENT
2.8

Figure 18. Ford property – section parallel to diamond-drill hole No. 2 along A-A' shown on Figure 17.

FLOW TOP
FLOW TOP
FLOW TOP

Plate IIIA. Photograph showing flow tops and flow thickness of massive to vesicular lavas in the open cut above the adit shown on Figure 17.

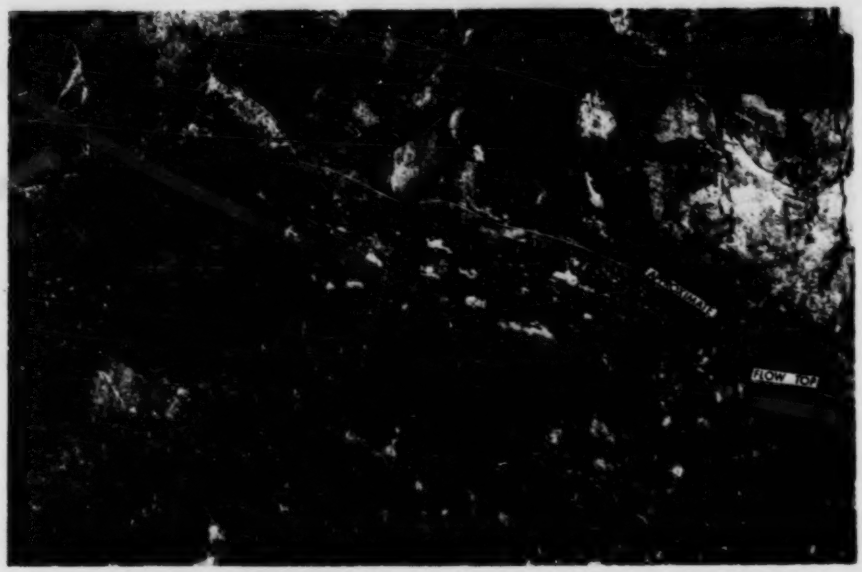


Plate IIIB. Detail of an amygdaloidal flow top as shown on Plate IIIA. Amygdules often contain copper mineralization. Note the volcanic clast below the pencil, centrally located and one-third up from the base.

JANETTE (Fig. B, NO. 91)

LOCATION: Lat. 50° 16′ Long. 120° 24′ (92I/8W)
NICOLA M.D. One mile northeast of the north end of Nicola Lake, between 2,100 and 2,300 feet elevation.
CLAIMS: JANETTE 1 to 12, SPANISH EYES 1 to 4.
OWNER: LORENA MINES LTD., 505 Burrard Street, Vancouver.
DESCRIPTION: The property is underlain by Nicola Group volcanic rocks.
WORK DONE: Magnetometer survey, approximately 15 line-miles.
REFERENCE: Assessment Report 4327.

MARY REYNOLDS (92I/SE-115) (Fig. B, No. 98)

LOCATION: Lat. 50° 20′ Long. 120° 20′ (92I/8W)
NICOLA M.D. Two miles south-southeast of the middle of Stump Lake, at approximately 3,400 feet elevation.
CLAIMS: Mineral Lease M-20 (MARY REYNOLDS and GOLD CUP, Lots 674 and 675), Mineral Lease M-19 (ROBERT DUNSMUIR, Lot 673), ND 1 to 4, ARD 1 to 6, ARD 1 and 2 Fractions, PV 1 to 12.
OWNER: PINE VALLEY EXPLORERS LTD., Box 441, Merritt.
METALS: Gold, silver, lead, minor zinc and copper.
DESCRIPTION: The claims are underlain by massive and mildly foliated augite andesite of the Nicola Group which in the central part of Mineral Lease M-20 contain a northeast-trending zone of quartz-carbonate alteration 3,000 feet long and up to 150 feet wide. Silver and gold-bearing veins composed of quartz calcite, galena, sphalerite, and pyrite occur in the alteration zone.
WORK DONE: Magnetometer survey, 30 line-miles; SP survey, 30 line-miles; geochemical survey, 1,612 samples (288 analysed), 31 line-miles covering all claims.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 186; Assessment Report 4412.

SVEN (Fig. B, No. 97)

LOCATION: Lat. 50° 23′ Long. 120° 24′ (92I/8W)
NICOLA M.D. Seven miles east-southeast of Lac Le Jeune, on the west side of Moore Creek.
CLAIMS: SVEN 1 to 10, SVEN 1 and 2 Fractions.
OWNER: LAGUNA RESOURCES LTD., 101, 325 Howe Street, Vancouver.
DESCRIPTION: In the extreme southwest corner of the property gneissic granodiorite has been cut by small bodies of rhyolite.
WORK DONE: Linecutting, magnetoemter, and EM surveys, 11.5 line-miles.
REFERENCE: Assessment Report 4411.

ULLA (Fig. B, NO. 94)

LOCATION: Lat. 50° 23' Long. 120° 27' (92I/8W)
NICOLA and KAMLOOPS M.D. Six miles south-southeast of Lac Le Jeune, 1 mile west of Moore Creek, between 3,400 and 4,100 feet elevation.
CLAIMS: ULLA 1 to 14.
OWNER: ENVOY RESOURCES LTD., 2006, 727 Sixth Avenue SW., Calgary, Alta.
DESCRIPTION: The claims are underlain by andesite and basalt of the Nicola Group, intruded on the western part by granitic rocks of the Nicola batholith. No economic mineralization was noted during preliminary examination.
WORK DONE: Linecutting, magnetometer survey, and reconnaissance geological mapping.
REFERENCE: Assessment Report 4322.

SACK (92I/SE-166) (Fig. B, No. 93)

LOCATION: Lat. 50° 24' Long. 120° 25' (92I/8W)
KAMLOOPS and NICOLA M.D. Six miles south-southeast of Lac Le Jeune, on Moore Creek, between 3,400 and 4,100 feet elevation.
CLAIMS: SACK 1 to 18, SACK 1 and 2 Fractions.
OWNER: TWIN RIVER RESOURCES LTD., 101, 325 Howe Street, Vancouver.
METALS: Molybdenum, minor silver and copper.
DESCRIPTION: The claims are underlain by rocks of the Nicola Group which include andesite and basalt with interbedded pyroclastic strata, and sedimentary rocks with some limestone. These rocks are cut by gabbro dykes and to the west are intruded by granitic rocks of the Nicola batholith.
WORK DONE: Linecutting; claims surveyed; surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 19 line-miles covering all claims.
REFERENCE: Assessment Report 4323.

NAP (92I/SE-169) (Fig. B, No. 92)

LOCATION: Lat. 50° 25' Long. 120° 17' (92I/8W)
KAMLOOPS M.D. Twenty-one miles south of Kamloops, on the east side of Napier Lake and Highway 5, at approximately 3,000 feet elevation.
CLAIMS: NAP 1 to 54.
OWNERS: DOME EXPLORATION (CANADA) LIMITED and NEWCONEX CANADIAN EXPLORATION LTD., 808, 525 Seymour Street, Vancouver V6B 3H7.
METAL: Copper.
DESCRIPTION: The claims are underlain in part by pyroclastic rocks of the Nicola Group which have been extensively silicified and pyritized along an east-west-trending shear zone. Mineralization consists of chalcopyrite associated with disseminated pyrite.

(92I/8W)

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 15 line-miles; geochemical soil survey, 208 samples, 15 line-miles covering all claims; percussion drilling, 12 holes totalling 3,000 feet on Nap 3, 5, 7, 8, 9, 11, 12, and 15.

REFERENCE: Assessment Report 4500.

DERBY (Fig. B, No. 96)

LOCATION: Lat. 50° 25′ Long. 120° 24′ (92I/8W)

KAMLOOPS M.D. Six miles southeast of Lac Le Jeune, on the east side of Moore Creek.

CLAIMS: DERBY 1 to 22.

OWNER: MONITOR RESOURCES LTD., 534, 789 West Pender Street, Vancouver.

DESCRIPTION: Volcanic rocks of the Nicola Group outcrop on about 10 per cent of the property.

WORK DONE: Magnetometer survey, 17 line-miles.

REFERENCE: Assessment Report 4324.

SAR (92I/SE-163) (Fig. B, No. 95)

LOCATION: Lat. 50° 25′ Long. 120° 27′ (92I/8W)

KAMLOOPS M.D. Five miles south-southeast of Lac Le Jeune, 1.5 miles west of Moore Creek, between 3,800 and 4,600 feet elevation.

CLAIMS: SAR 1 to 24.

OWNER: TRIEX RESOURCES LTD., 101, 535 Thurlow Street, Vancouver.

METAL: Copper.

DESCRIPTION: Nicola Group volcanic rocks underlie the western half of the claims and granitic rocks, the eastern half. Chalcopyrite occurs in quartz vein material on SAR 14.

WORK DONE: Geochemical soil survey, 305 samples covering most of the claims.

REFERENCE: Assessment Report 4326.

WADE (Fig. A, No. 14)

LOCATION: Lat. 50° 22′ Long. 120° 00′ (82L/5W; 92I/8E)

Report on this property in section 82L/5W.

AFT, LEE (Fig. B, No. 176)

LOCATION: Lat. 50° 32′ Long. 120° 13′ (92I/9E)

KAMLOOPS M.D. Ten miles south-southeast of Kamloops, on the east side of Shumway Lake.

CLAIMS: AFT 1 to 39, LEE 1 to 16, TON 1 to 34, MAC 1 to 14.

OPERATOR: KOMO EXPLORATIONS LTD., 549 Howe Street, Vancouver.

DESCRIPTION: The western portion of the property is underlain by Cache Creek Group rocks and the eastern portion, by the Iron Mask batholith.
WORK DONE: 1972 – reconnaissance IP survey, approximately 13 line-miles.
REFERENCE: Assessment Report 4414.

TIRE (Fig. B, No. 177)

LOCATION: Lat. 50° 33′ Long. 120° 03′ (92I/9E)
KAMLOOPS M.D. One and one-half miles east-southeast of the east end of Campbell Lake.
CLAIMS: TIRE 1 to 20.
OWNER: M. Boyle.
OPERATOR: BRITISH PACIFIC EXPLORATIONS LIMITED, 704, 602 West Hastings Street, Vancouver.
WORK DONE: Linecutting; geochemical soil survey, 528 samples taken on a grid of 12 line-miles (alternate samples were analysed).
REFERENCES: Assessment Reports 4318, 4489.

DOT (Fig. B, No. 174)

LOCATION: Lat. 50° 33′ Long. 120° 11′ (92I/9E)
KAMLOOPS M.D. Ten miles southeast of Kamloops, halfway between Scuitto and Walker Lakes.
CLAIMS: DOT 1 to 20.
OWNER: M. Boyle.
OPERATOR: MATADOR DEVELOPMENTS LTD., c/o 837 West 19th Avenue, Vancouver.
DESCRIPTION: The property is underlain mainly by coarse, massive quartz diorite.
WORK DONE: Geological, magnetometer, and geochemical surveys, approximately 12 line-miles.
REFERENCE: Assessment Report 4320.

CLAIRDON (92I/NE-103) (Fig. B, No. 175)

LOCATION: Lat. 50° 34′ Long. 120° 14′ (92I/9E)
KAMLOOPS M.D. Eight miles southeast of Kamloops, immediately north of Walker Lake.
CLAIMS: HARP 1 to 40.
OWNER: SARAFAND DEVELOPMENTS LIMITED, 3rd Floor, 540 Howe Street, Vancouver.
METAL: Gold.
DESCRIPTION: The northeastern claims are underlain by intrusive granite and the remaining claims, by Cache Creek argillite, greenstone, and serpentine units.

WORK DONE: 1972 – geological mapping, geochemcial soil survey, 460 samples; two IP surveys, 6.9 line-miles (one at 400-foot electrode separation and one at 800-foot separation).

REFERENCES: *Geol. Surv., Canada,* Mem. 249, p. 72 (Clairdon Mining Company); Assessment Report 4442.

IC (Fig. B, No. 178)

LOCATION: Lat. 50° 35' Long. 120° 14' (92I/9E)
KAMLOOPS M.D. Seven miles southeast of Kamloops, 2.5 miles east of Separation Lake.

CLAIMS: IC 1 to 24.

OWNER: E. AMENDOLAGINE, 4450 Harriet Street, Vancouver 10.

DESCRIPTION: The claims are underlain by granitic rocks of the Coast Plutonic Complex.

WORK DONE: 1972 – reconnaissance geological and geochemical surveys.

REFERENCE: Assessment Report 4440.

MOT (92I/NE-128) (Fig. B, No. 179)

LOCATION: Lat. 50° 38' Long. 120° 07' (92I/9E)
KAMLOOPS M.D. Eight miles east of Kamloops, at Barnhart Vale, at approximately 2,200 feet elevation.

CLAIMS: MOT 11 to 18, 21 to 24, 27 to 30, BHV 1 to 10, BUGLE 1 to 6.

OWNER: Copper Range Exploration Company, Inc.

OPERATORS: COPPER RANGE EXPLORATION COMPANY, INC., 1425 Brentwood Street, Lakewood, Colorado 80215 and TECK CORPORATION LTD., 700, 1177 West Hastings Street, Vancouver V6E 2K5.

METALS: Gold, minor copper, silver, molybdenum.

DESCRIPTION: The Mot claims are situated in a mixed terrane which includes Paleozoic Cache Creek Group chert, limestone, and argillite and Mesozoic (?) plutonic rocks and volcanic flows of the Middle Eocene Kamloops Group. The metalliferous anomaly lies approximately 1 mile east of the Iron Mask batholith – Cache Creek Group contact in Cache Creek rocks that have been intruded locally by light-coloured feldspar porphyry dykes. In the vicinity of an anomaly iron oxide is pervasive as fracture filling in the extensively cracked host rock. Argillic alteration is present in and near dyke rocks. Oxides and sulphides of copper are visible in trenches that occupy part of the main anomaly.

WORK DONE: Claims mapped, 1 inch equals 400 feet; surface geological mapping, 1 inch equals 1,000 feet covering Mot and BHV claims and 1 inch equals 400 feet covering Mot 14, 15, 28 and Bugle 5; geochemical rock chip survey, approximately 100 samples covering Mot 14, 22, 23, and 27.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 189; Assessment Report 4315.

MB, SUGI (Fig. B, No. 173)

LOCATION: Lat. 50° 34' Long. 120° 15' (92I/9)
KAMLOOPS M.D. Eight miles south-southeast of Kamloops, 1 mile northwest of Walker Lake, at approximately 3,000 feet elevation.
CLAIMS: MB 1 to 22, SUGI 1 to 12.
OWNERS: M. Boyle and Command Resources Ltd. (formerly Kodiak Mines Ltd.).
OPERATORS: COMMAND RESOURCES LTD., 1400, 1030 West Georgia Street, Vancouver and HIBERNIAN INTERNATIONAL DEVELOPMENT CORPORATION LTD., 307, 475 Howe Street, Vancouver.
WORK DONE: 1972 – prospecting, line picketting, and geochemical soil survey, 240 samples.
REFERENCE: Assessment Report 4448.

JEAN (Fig. B, No. 172)

LOCATION: Lat. 50° 31' Long. 120° 17' (92I/9W)
KAMLOOPS M.D. Ten miles south of Kamloops, on the west side of Highway 5 and Shumway Lake.
CLAIMS: JEAN 1 to 112.
OWNER: JOY INDUSTRIES LIMITED (formerly Joy Mining Limited), 534, 789 West Pender Street, Vancouver.
DESCRIPTION: The property is underlain by various rocks of the Cache Creek, Nicola, and Kamloops Groups.
WORK DONE: 1972 – IP survey, approximately 40 line-miles.
REFERENCE: Assessment Report 4306.

JD (92I/NE-125) (Fig. B, No. 171)

LOCATION: Lat. 50° 34' Long. 120° 18' (92I/9W)
KAMLOOPS M.D. Seven miles south of Kamloops, south and south west of Separation Lake, between 2,500 and 3,600 feet elevation.
CLAIMS: JD 12, 21 to 34, 41 to 71, 85 to 90, JD 78 Fraction, PIN 1 to 7.
OWNER: Flagstone Mines Limited.
OPERATOR: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.
METAL: Copper.
DESCRIPTION: The claims are underlain by coarse and fine-grained rocks of the Iron Mask batholith enclosed on the west, south, and east by volcanic rocks of the Nicola Group and unconformably overlain to the west by Middle Eocene basaltic flows of the Kamloops Group. Upper Paleozoic rocks of the Cache Creek Group are in contact with the Nicola Group on the east side of the property. Mineralization consists of disseminated chalcopyrite and chalcocite in altered zones spatially associated with faulting.
WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering JD claims; geochemical soil survey, 1,030 samples, 36 line-miles covering JD claims; surface diamond drilling, three holes totalling 1,812 feet on JD 56; linecutting, 36 line-miles on JD claims.

(92I/9W)

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 191 (JOKER).

IM (92I/NE-112) (Fig. B, No. 163)

LOCATION: Lat. 50° 36′ Long. 120° 20′ (92I/9W)
KAMLOOPS M.D. From Knutsford southward to Edith Lake, at approximately 3,500 feet elevation.

CLAIMS: IM 1 to 75, KN 1 to 3, MR 7 to 10, 12 to 22, 24, 25, A Fraction, EL 1 to 16, HAWTHORNE and DISPATCHER (Mineral Leases M-36 and M-35, Lots 834 and 1748).

OWNER: Pan Ocean Oil Ltd.

OPERATOR: CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.

METAL: Copper.

DESCRIPTION: The property covers a portion of the southeastern end of the Upper Triassic Iron Mask batholith and is underlain mostly by microdiorite and micromonzonite.

WORK DONE: Surface diamond drilling, nine holes totalling 2,286 feet on IM 30-35 and 52.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 194; Assessment Report 4844.

PAM, BUDA (92I/NE-116) (Fig. B, No. 165)

LOCATION: Lat. 50° 36′ Long. 120° 23′ (92I/9W)
KAMLOOPS M.D. Five miles southwest of Kamloops, adjoining Jacko Lake on the south and southeast along Peterson Creek.

CLAIMS: PAM 8 to 24, 28, 29, 32, 33, MAP 2 to 5 Fractions, DAVE 1 to 3, 5, 7, 9, 23, 24, 26, 28, 30 to 32, DAVE 2, 3, 5 Fractions, DAVE 1B Fraction, DAVE 2B Fraction, DAVE 38A to 41A, 43A, 44A, 49A to 51A, FOX 7 to 10, 13, FOX 4, 11, 12 Fractions, DON 1 to 9 Fractions, B 1 to 6, 30 to 33, X 31 to 34, WADE 3.

OWNERS: Rolling Hills Copper Mines Limited and New Minex Resources Ltd. (formerly Minex Development Ltd.).

OPERATOR: NEW MINEX RESOURCES LTD., 210, 470 Granville Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims cover a section of the central part of the southwestern edge of the Upper Triassic Iron Mask batholith and are underlain by dioritic rocks of this batholith and, to the south, by andesitic volcanic rocks of the Upper Triassic Nicola Group.

WORK DONE: Magnetometer surveys, 12 line-miles and 14 line-miles covering Dave 3 Fraction, Pam 12-20, 22, 23, 28, Wade 3, Don 4, 5, 7, 8, 9 Fractions, Dave 38A, 42A-44A.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 193; Assessment Reports 4312, 4313, 4314.

KENCO (Fig. B, No. 170)

LOCATION: Lat. 50° 37′ Long. 120° 19′ (92I/9W)
KAMLOOPS M.D. Three miles south of Kamloops, on Highway 5.

CLAIMS: KENCO 25 to 32, 34, 35, 38, 39.

OWNER: NORTH BAY MINES & OILS LTD., 414, 198 West Pender Street, Vancouver.

WORK DONE: Magnetometer survey, 10 line-miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 295; Assessment Report 4441.

AJAX, WHEAL TAMAR, MONTE CARLO (92I/NE-12, 13, 14) (Fig. B, No. 164)

LOCATION: Lat. 50° 37′ Long. 120° 23′ (92I/9W)
KAMLOOPS M.D. Five miles southwest of Kamloops, 1 mile east of Jacko Lake, at approximately 2,500 feet elevation.

CLAIMS: AJAX (Lot 4710), WHEAL TAMAR (Lot 2126), MONTE CARLO (Lot 4716), NEPTUNE (Lot 4712), GRASS ROOTS (Lot 1496), COPPER STAR FR. (Lot 3015), FORLORN (Lot 3016), SULTAN (Lot 4717), AJAX Fraction, JACKO 4, 6, 8, 10, and 18 Fractions.

OWNER: Cominco Ltd.

OPERATOR: ATTAN MINES LTD., Box 34183, Vancouver.

METAL: Copper.

DESCRIPTION: The claims cover a section of the central part of the southwestern edge of the Upper Triassic Iron Mask batholith and are underlain by gabbro, diorite, monzonite, microdiorite porphyry, and serpentinized picrite basalt.

WORK DONE: IP survey, 9.4 line-miles covering Jacko 8, 10, 18 Fractions, Copper Star Fraction, Forlorn, Sultan, Wheal Tamar, Monte Carlo, and Grass Roots; percussion drilling, 23 holes totalling 6,900 feet on Wheal Tamar, 4 holes totalling 1,200 feet on Jacko 10 Fraction, and 28 holes totalling 7,210 feet on Ajax.

REFERENCE: *Minister of Mines, B.C.*, Ann. Rept., 1967, p. 142.

RAINBOW (92I/NE-28) (Fig. B, No. 160)

LOCATION: Lat. 50° 38′ Long. 120° 28′ (92I/9W)
KAMLOOPS M.D. Seven miles west-southwest of Kamloops, on Sugarloaf Hill, at approximately 3,200 feet elevation.

CLAIMS: RAINBOW 1 to 23, 51, 211, LEE 1 to 8 Fractions, 10 Fraction, 16 to 18 Fractions, LEE 1 to 8, NATIVE 1, 4, and 6 Fractions, PATCHUP 3 and 4, LOPS 13, 35, 37, 39, 41 to 45, 47, 48, Lot 883, DING 2 Fraction, D 1 Fraction.

OWNER: Leemac Mines Ltd.

OPERATOR: GETTY MINING PACIFIC, LIMITED, 614, 510 West Hastings Street, Vancouver.

METAL: Copper.

(92I/9W)

DESCRIPTION: The mineralization is in altered microdiorite of the Iron Mask batholith and in microdiorite porphyry of the Sugarloaf intrusions, all of which are Upper Triassic in age. Strong faulting and fracturing in a northwesterly direction and crossfaulting in a northeasterly direction are prominent on the property.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims; IP survey, 3.8 line-miles and magnetometer survey, 18 line-miles covering most of the claims; rotary drilling, five holes totalling 2,922 feet on Rainbow 5 and 6 and D 1 Fraction; percussion drilling, 47 holes totalling 16,380 feet on Rainbow 2, 3, 5, 6, 9, 10, 12, 13, 18, Lee 5, 7, Lee 2 and 8 Fractions, and D 1 Fraction; linecutting.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 236.

PYTHON, COPPER HEAD (92I/NE-2, 3, 4, 5, 7) (Fig. B, No. 166)

LOCATION: Lat. 50° 39' Long. 120° 24' (92I/9W)
KAMLOOPS M.D. The property is centred 4 miles west-southwest of Kamloops.

CLAIMS: PYTHON (Lot 2565), COPPER HEAD (Lot 2564), EVENING STAR (Lot 1013), GOLDEN STAR (Lot 845), SUNRISE (Lot 879), LUCKY STRIKE (Lot 1036), CUB, PYTHON, PYE, JET, COLT, LINE, etc., totalling approximately 65.

OWNER: Makaoo Development Company Limited.

OPERATOR: TECK CORPORATION LTD., 700, 1177 West Hastings Street, Vancouver V6E 2K5.

METALS: Copper, silver, gold.

DESCRIPTION: The claims cover several old showings including Python-Copper Head, Orphan Boy, Noonday, Lost Chord, and Evening Star-Golden Star and cover part of the central section of the northeastern margin of the Upper Triassic Iron Mask batholith.

WORK DONE: IP survey, 6 line-miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 196 (MAKAOO); Assessment Report 4317.

GIBBI (Fig. B, No. 168)

LOCATION: Lat. 50° 39' Long. 120° 26' (92I/9W)
KAMLOOPS M.D. Five miles west-southwest of Kamloops, on Iron Mask Hill, at approximately 3,000 feet elevation.

CLAIM: GIBBI 1 (formerly KEY).

OWNER: D.I.T. HOLDINGS LTD., 102, 2222 Bellevue Avenue, West Vancouver.

WORK DONE: Magnetometer survey, approximately 5 line-miles on Gibbi 1.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, p. 142 (EVENING STAR, GOLDEN STAR); Assessment Report 4837.

IRON MASK, DM (92I/NE-8, 10, 11, 18, 30) (Fig. B, No. 161)

LOCATION: Lat. 50° 40′ Long. 120° 27′ (92I/9W)
KAMLOOPS M.D. Five miles west of the centre of Kamloops, surrounding Ironmask Lake, at approximately 2,500 feet elevation.

CLAIMS: DM 55 to 57, 61 to 64, 71, 73, 75, 77, 96 to 99, 120, 121, 124, DM 2, 3, 5, 94, 95, and 99 Fractions, LORNA 1 to 4, AUDRA 1 Fraction, RO 5, 7 to 10, 11 to 26, 47 to 52, 61, 63 to 65, EB 1 to 12, 14 to 19, ID 3, 5, 6, and 16 Fractions, A 1 to 10, 12, 13, 15, 16, A 1 to 3 Fractions, AA 1 and 2, REX 4 to 7 Fractions, DELLA 2 and 3 Fractions, DEN 4 and 5 Fractions, JAN 1 to 3, JAN 4 to 8 Fractions, MRO 1 to 8 and 10 to 14 Fractions, IRON CAP (Mineral Lease M-21), ERIN FR. (Lot 1066), NORMA (Lot 1302), IRON MASK (Lot 878), SUNRISE (Lot 879), COPPER QUEEN (Lot 880), CIVIL FR. (Lot 1068), VICTOR (Lot 1340), MINT FR. (Lot 1342), EARNSCLIFF FR. (Lot 1301), EMORY (Lot 1050), NIGHTHAWK (Lot 1747), LUCKY STRIKE (Lot 1036), JUMBO FR. (Lot 1067), CHAMPION NO. 1 (Lot 5622), CHAMPION NO. 2 (Lot 5623), LS 6 (Lot 5624), LS 7 (Lot 5625), LS 8 (Lot 5628), LS 9 (Lot 5629), LS 10 (Lot 5627), LS 11 (Lot 5626), WINTY (Lot 4667), CON VERDANT (Lot 1341), MAY FR. (Lot 1311), SODIUM FR. (Lot 4666).

OWNER: Comet Industries Ltd.

OPERATOR: GETTY MINING PACIFIC, LIMITED, 614, 510 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: The property covers many old showings including Lucky Strike, Iron Mask, Erin, Larsen, Iron Cap, and DM (Truth). Mineralization occurs along the northeastern edge of the eastern part of the Upper Triassic Iron Mask batholith where microdiorite is intruded by microdiorite and micromonzonite porphyry and by bodies of serpentinized picrite basalt.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims; IP survey, 54 line-miles and magnetometer survey, 54 line-miles covering most of the claims; rotary drilling, eight holes totalling 6,839 feet on Lots 880, 1302, 1340, 5625, and 5628; percussion drilling, 159 holes totalling 50,897 feet on 12 RO, 4 DM, and 2 EB claims and 20 lots; claims surveyed; linecutting.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 197 (IRON MASK); 1972, p. 195 (DM, LORNA, RO); 1972, p. 198 (EB).

JR (Fig. B, No. 169)

LOCATION: Lat. 50° 42′ Long. 120° 30′ (92I/9W)
KAMLOOPS M.D. Eight miles west of Kamloops, on the south shore of Kamloops Lake.

CLAIMS: JR 5 to 20.

OWNER: STYNRO DEVELOPMENT LTD., 427, 470 Granville Street, Vancouver.

(92I/9W)

WORK DONE: 1972 - linecutting.
REFERENCE: Assessment Report 4311.

HILLTOP (92I/NE-97) (Fig. B, No. 167)

LOCATION: Lat. 50° 43′ Long. 120° 27′ (92I/9W)
KAMLOOPS M.D. Approximately 1 mile north of Kamloops airport.
CLAIMS: BD 1 to 19, DB 1 to 14.
OWNER: BARREL RESOURCES LTD., 534, 789 West Pender Street, Vancouver.
METALS: Gold, silver.
WORK DONE: A grid aggregating 25 line-miles was established, and soil sampling and a magnetic survey conducted on it.
REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1913, p. 192; *Geol. Surv., Canada,* Mem. 249, p. 69; Assessment Report 4456.

CON (Fig. B, No. 154)

LOCATION: Lat. 50° 33′ Long. 120° 40′ (92I/10E)
KAMLOOPS M.D. Approximately 8 miles northeast of Logan Lake, immediately north of Wyse Lakes, at 4,800 feet elevation.
CLAIMS: CON 1 to 20.
OWNERS: DOME EXPLORATION (CANADA) LIMITED and NEWCONEX CANADIAN EXPLORATION LTD., 808, 525 Seymour Street, Vancouver V6B 3H7.
DESCRIPTION: The claims are underlain by a sequence of northwesterly trending Nicola Group pyroclastic rocks.
WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 8 line-miles; and geochemical soil survey, 211 samples, 8 line-miles covering all claims.

LED (92I/NE-119, 122) (Fig. B, No. 200)

LOCATION: Lat. 50° 37′ Long. 120° 38′ (92I/10E)
KAMLOOPS M.D. Thirteen miles west-southwest of Kamloops, on the north slope of Greenstone Mountain, between 2,500 and 5,884 feet elevation.
CLAIMS: LED 2 to 6, 8 to 10, 12 to 14, 23 to 35, 74, 76, 81 to 94, 112 to 122, GG 1 to 3, 5 to 8, GG 11 Fraction.
OWNERS: J. P. Henry and Moneta Porcupine Mines Limited.
OPERATOR: MONETA PORCUPINE MINES LIMITED, 420, 475 Howe Street, Vancouver 1.
METALS: Copper, molybdenum.

DESCRIPTION: The property is underlain mainly by Nicola Group volcanic rocks which have been intruded by small bodies of quartz monzonite east of Gilbert Lake and northeast of Greenstone Mountain. Chalcopyrite, molybdenite, and pyrite occur in quartz veins in the Nicola rocks and on the north slope of Greenstone Mountain brecciated volcanic rocks are mineralized with pyrite and minor chalcopyrite. The Gilbert Lake stock contains minor disseminated chalcopyrite and molybdenite.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet; geochemical soil survey, 236 samples taken mostly at 200 by 600-foot grid spacing covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 202; Assessment Report 4881.

AFTON (92I/NE-113, 23) (Fig. B, No. 159)

LOCATION: Lat. 50° 39′ Long. 120° 31′ (92I/10E)
KAMLOOPS M.D. Eight miles west of the centre of Kamloops, on the south side of the Trans-Canada Highway, at approximately 2,100 feet elevation.

CLAIMS: AFTON 1 to 7, AFTON Fraction, ADD 1 to 30, POT 3, 4, 10, 15, and 17 Fractions, POT 5, 8, 9, 11 to 14, TOP 1 to 4 Fractions, BERNIE 7 and 8 Fractions, BERNIE 9, AD 1 Fraction, ADD 1 Fraction, Mineral Lease M-22 (DOMINION, Lot 1595).

OWNER: Afton Mines Ltd.

OPERATORS: ISO MINES LIMITED and TECK CORPORATION LTD., 700, 1177 West Hastings Street, Vancouver V6E 2K5.

METALS: Copper, gold, silver.

DESCRIPTION: The orebody is located on the extreme northwestern edge of the eastern part of the Upper Triassic Iron Mask batholith. Mineralization is confined largely to altered phases of this batholith and to the north is in fault contact with a thick succession of barren Early Tertiary sedimentary and volcanic rocks of the Kamloops Group.

WORK DONE: Surface geological mapping, 1 inch equals 20 feet covering Dominion and 1 inch equals 400 feet covering Add 1, 3, 4 and Dominion; IP survey, 35 line-miles and magnetometer survey, 43 line-miles covering all claims; geochemical soil survey, 1,165 samples, 43 line-miles covering all claims; surface diamond drilling, 54 holes totalling 48,533 feet on Dominion, Add 30, Add 1, Add 21, Add 3, and Add 16; rotary drilling, 18 holes totalling 6,729 feet on Add 3, Dominion, and Pot 5; percussion drilling, 55 holes totalling 10,673 feet on Add 24, 23, 19, 25, 16, 2, 17, Pot 2, 3, and 4 Fractions, Pot 5, Top 2 Fraction, Afton 7, and Afton Fraction; surface workings, claims, and topography mapped; linecutting covering all claims; trenching, 2,270 feet on Dominion.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 209-220.

JAM, GOLDEN (Fig. B, No. 162)

LOCATION: Lat. 50° 40' Long. 120° 32' (92I/10E)
KAMLOOPS M.D. Nine miles west of Kamloops on the north side of the Trans-Canada Highway, between 2,400 and 2,600 feet elevation.

CLAIMS: JAM 1 to 10, 15 to 20, GOLDEN 1 to 6 Fractions, GOLDEN 7 to 21.

OWNERS: Golden Gate Explorations Ltd. and Alhambra Mines Ltd.

OPERATOR: CANEX PLACER LIMITED, 7th Floor, 1030 West Georgia Street, Vancouver.

DESCRIPTION: The property is underlain by a black-faulted succession of sedimentary and volcanic rocks of the Early Tertiary Kamloops Group which unconformably overlay Upper Triassic volcanic rocks of the Nicola Group and intrusive rocks of the Iron Mask batholith.

WORK DONE: Reconnaissance surface geological mapping; magnetometer, EM, and IP surveys covering the southern portion of the claim block; surface diamond drilling, one hole totalling 2,000 feet on a Jam claim; claims surveyed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 205.

MM (Fig. B, No. 155)

LOCATION: Lat. 50° 41' Long. 120° 42' (92I/10E)
KAMLOOPS M.D. On the northwest side of Duffy Creek, 4 miles from Kamloops Lake, at approximately 3,500 feet elevation.

CLAIMS: MM 1 to 20.

OWNER: Ashcroft Resources Ltd. (formerly Vastlode Mining Company Limited).

OPERATOR: SONIC-RAY RESOURCES LTD., Box 371, Vancouver.

DESCRIPTION: The claims are underlain mainly by dark grey andesite of the Triassic Nicola Group.

WORK DONE: 1972 – magnetometer and geochemical surveys, approximately 12 line-miles.

REFERENCE: Assessment Report 4216.

RPM (Fig. B, No. 158)

LOCATION: Lat. 50° 42' Long. 120° 32' (92I/10E)
KAMLOOPS M.D. Ten miles west of Kamloops, along the south shore of Kamloops Lake, at approximately 1,700 feet elevation.

CLAIMS: RPM 1 to 4, 9 to 36.

OWNER: Cree Lake Mining Ltd.

OPERATOR: TRICENTROL CANADA LIMITED, 2640 One Calgary Place, 330 Fifth Avenue SW., Calgary, Alta.

DESCRIPTION: The claims are underlain by Upper Triassic volcanic rocks of the Nicola Group cut by dioritic and gabbroic rocks of the Upper Triassic Iron Mask batholith. These rocks are unconformably overlain by an extensive cover of sedimentary and volcanic rocks of the Middle Eocene Kamloops Group.

(92I/10E)

WORK DONE: IP survey, 3 line-miles covering RPM 1-4 and 9-12; geochemical soil survey, 1,066 samples, 20 line-miles covering RPM 1-4 and 9-14.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 207; Assessment Report 4905.

PAT (Fig. B, No. 157)

LOCATION: Lat. 50° 42′ Long. 120° 39′ (92I/10E)
KAMLOOPS M.D. Two and one-half miles from Kamloops Lake, on Duffy Creek, at approximately 2,000 feet elevation.

CLAIMS: PAT 1 to 6.

OWNER: P. J. MacLEAN, 3260 Admirals Road, Victoria.

DESCRIPTION: The area is underlain in part by rocks of the Triassic Nicola Group and in part by Tertiary volcanic rocks.

WORK DONE: Linecutting and VLF EM survey, 3.4 line-miles; magnetometer survey, 2.8 line-miles; geochemical soil survey, 61 samples taken at 100-foot intervals along one line covering Pat 1-4.

REFERENCE: Assessment Report 4721.

GUT, CARM (Fig. B, No. 156)

LOCATION: Lat. 50° 35′ Long. 120° 45′ (92I/10)
KAMLOOPS M.D. Two miles west of Dominic Lake, at approximately 5,000 feet elevation.

CLAIMS: GUT 19 to 28, 34, 36, 38, 40, 42, CARM 9 to 18, 21, 23, 25, 27, 29.

OWNER: G. S. ELDRIDGE, 2907 West 42nd Avenue, Vancouver.

DESCRIPTION: The area is apparently underlain by rocks of the Triassic Nicola Group.

WORK DONE: 1972 – reconnaissance EM and magnetometer surveys, 9.7 line-miles; geochemical survey, 3.5 line-miles.

REFERENCE: Assessment Report 4217.

OUTRIDER (92I/NE-41) (Fig. B, No. 146)

LOCATION: Lat. 50° 31′ Long. 120° 58′ (92I/10W)
KAMLOOPS M.D. Highland Valley, surrounding Bose Lake, at approximately 4,500 feet elevation.

CLAIMS: OUTRIDER 13, 15, 16 to 22, 24, BAY 1 and 2 Fractions, BAY 16, 18, 19, 21, 23, 29 to 31, DAVE 2, 4 to 6, 7 to 12, 14 to 24, 27 to 33, 35, 42, LODGE 1 to 6, 13 to 15, 17, 19, 21, 24, 33, 34, 154 to 160, LODGE 1 and 153 Fractions, SD 5 to 10, KB 1 to 4, BAD 12, B, D, and F Fractions, COW 1 to 8.

OWNER: VALLEY COPPER MINES LIMITED, 431 General Office Building, Trail.

METAL: Copper.

DESCRIPTION: The claims are underlain by Guichon quartz diorite phase of the Guichon Creek batholith which has been cut by dykes and irregular bodies of younger quartz diorite. Low-grade mineralization has been found at several places on the property in or closely associated with north-south faults.

WORK DONE: Time-domain IP survey, 18 line-miles covering Outrider, Lodge, SD, KB, and Bay claims.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, p. 156; Assessment Report 4724.

BCD (Fig. B, No. 148)

LOCATION: Lat. 50° 33′ Long. 120° 55′ (92I/10W)
KAMLOOPS M.D. Highland Valley, 2.5 miles northeast of Bose Lake.

CLAIMS: BCD 1 to 30, 32 to 51, BCD 31 Fraction.

OWNER: COMET INDUSTRIES LTD., 2502, 1177 West Hastings Street, Vancouver.

DESCRIPTION: The property is underlain primarily by Guichon phase granodiorite which has been intruded locally by dykes and small bodies of porphyry. The outcrops occur in north-trending ridges because of fault control and glacial scouring.

WORK DONE: VLF EM survey, 3.6 line-miles covering BCD 5-12, 23-26, 35, 36, and 50.

REFERENCES: Assessment Reports 4560, 4561.

POD (Fig. B, No. 149)

LOCATION: Lat. 50° 35′ Long. 120° 55′ (92I/10W)
KAMLOOPS M.D. Four miles west-southwest of Tunkwa Lake.

CLAIMS: POD 1 to 4, 6, 8, 10 to 32.

OWNERS: D. J. McDonald, M. Martin, J. E. McDonald, and W. Bonin.

OPERATOR: DUSTY MAC MINES LTD., 433, 355 Burrard Street, Vancouver.

METALS: Copper, silver.

DESCRIPTION: The property is underlain by granodiorite of the Guichon phase of the Guichon Creek batholith. Little alteration has been noted. A prospect pit near the east border of Pod 2 contains two narrow, chalcopyrite-bearing quartz veins.

WORK DONE: Linecutting and magnetometer survey, 16.6 line-miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 222; Assessment Report 4408.

BLB (Fig. B, No. 150)

LOCATION: Lat. 50° 40′ Long. 120° 46′ (92I/10W)
KAMLOOPS M.D. Seven miles south-southwest of Savona, on Durand Creek, between 2,200 and 3,000 feet elevation.

CLAIMS: BLB 1 to 10, 41 to 50.

(92I/10W)

OWNER: *CANDEX DEVELOPMENT CORPORATION (formerly Darsi Mines* Ltd.), 307, 475 Howe Street, Vancouver.

DESCRIPTION: The eastern portion of the property is underlain by Nicola Group volcanic rocks and the western portion, by Kamloops Group basalts.

WORK DONE: Magnetometer survey, 1,500-foot intervals; geochemical soil survey, 83 samples collected.

REFERENCE: Assessment Report 4319.

BERU (Fig. B, No. 151)

LOCATION: Lat. 50° 42′ Long. 120° 47′ (92I/10W)
KAMLOOPS M.D. Five miles south-southwest of Savona, on the west side of Durand Creek, between 3,000 and 4,000 feet elevation.

CLAIMS: BERU 1 to 20.

OWNER: CHALLENGER EXPLORATION LTD., 328 Rogers Building, 470 Granville Street, Vancouver.

DESCRIPTION: Outcrops are sparse but the few located on claims 15 to 20 are reported to be metavolcanic and metasedimentary rocks.

WORK DONE: Airborne magnetometer and radiometric survey, 80 line-miles comprising 20 runs of 21,000 feet each at 500-foot spacing.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 223; Assessment Report 4669.

BEV, PAL (Fig. B, No. 152)

LOCATION: Lat. 50° 44′ Long. 120° 47′ (92I/10W)
KAMLOOPS M.D. Two miles southeast of Savona, on Durand Creek.

CLAIMS: BEV 3 to 20, 22, 25, 27, 29 to 35, 37, 39 to 42, PAL 12, 14, 16, 18 to 20.

OWNER: R. Shaw.

OPERATOR: CELTIC MINERALS LTD., 107, 325 Howe Street, Vancouver.

DESCRIPTION: In the north part of the claim area agglomerate is underlain by a thin limestone band which in turn is underlain by tuff. The south part is underlain by resistant andesite. No outcrop was found in the western part of the claims. The northern outcrops may belong to the Cache Creek Group but those to the south belong to the Nicola Group.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims.

REFERENCE: Assessment Report 4452.

KRAIN COPPER (92I/NE-38) (Fig. B, No. 145)

LOCATION: Lat. 50° 34′ Long. 121° 00′ (92I/10W, 11E)
KAMLOOPS M.D. Six miles north of the Bethlehem mine, on the east flank of Forge Mountain, at approximately 5,700 feet elevation.

CLAIMS: KRAIN COPPER, KRAIN 1 to 14, DW 1 to 6, DW 1 Fraction, KRAIN 1 to 6 Fractions.

(92I/11E)

OWNER: North Pacific Mines Ltd.

OPERATOR: GETTY MINING PACIFIC, LIMITED, 614, 510 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: The Krain property is underlain by rocks of the Guichon Creek batholith. A large number of porphyry dykes intrude the granitic rocks. In the northern part of the property, the granites are unconformably overlain by Tertiary volcanic flows. Chalcopyrite with minor bornite and pyrite occurs as specks, disseminations, and fracture fillings in shattered zones near the margins of porphyry dykes.

WORK DONE: IP survey, 6.1 line-miles covering DW 1, 3-6, and DW 1 Fraction; surface diamond drilling, 2,693 feet on Krain Copper and Krain 1 Fraction.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 224.

RAF, TAM (Fig. B, No. 131)

LOCATION: Lat. 50° 31′ Long. 121° 06′ (92I/11E)
KAMLOOPS M.D. Three miles west-northwest of Quiltanton Lake.

CLAIMS: RAF 1 to 10, 18 to 20, TAM 1 to 20.

OWNERS: Lornex Mining Corporation Ltd. and Valley Copper Mines Limited.

OPERATOR: LORNEX MINING CORPORATION LTD., 202, 580 Granville Street, Vancouver.

DESCRIPTION: Chataway granodiorite which underlies the claims has been cut by a dyke of porphyritic dacite and overlapped to the northwest by Kamloops Group tuff. A few malachite-bearing quartz veinlets cut the granodiorite on RAF 5.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering RAF 4, 5, 7, and 9; surface diamond drilling, one hole totalling 401 feet on RAF 5.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 264, 265; Assessment Report 4708.

DEN (92I/NW-14, 32, 33) (Fig. B, No. 130)

LOCATION: Lat. 50° 32′ Long. 121° 03′ (92I/11E)
KAMLOOPS M.D. Two miles north of Quiltanton Lake, on the southwest slope of South Forge Mountain.

CLAIMS: DEN 9, 11, 13, 15, 17, 19 to 37, 47 to 62, 78 to 80, 84, 85, NED 1 to 4 Fractions, LEM Fraction, ELKE 1 and 2 Fractions, DN 1 to 5 Fractions.

OWNERS: Western Adera Limited (formerly Adera Mining Limited) and Grandora Explorations Ltd.

OPERATOR: ACHERON MINES LTD., 107, 325 Howe Street, Vancouver.

METAL: Copper.

(92I/11E)

DESCRIPTION: The area is underlain mainly by granodiorite of the Bethlehem phase of the Guichon Creek batholith. Local Tertiary volcanic cover occurs in association with magnetic lows in the southeast corner of the property. Magnetic and resistivity lows suggest that a north-trending fault occurs in the centre of the property.

WORK DONE: Time-domain IP survey, 15.3 line-miles covering the central claims; magnetometer survey, 47 line-miles covering most of the claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 225; Assessment Reports 4404, 4804.

MO (92I/NW-53) (Fig. B, No. 142)

LOCATION: Lat. 50° 34′ Long. 121° 07′ (92I/11E)
KAMLOOPS M.D. Seven miles northwest of the Bethlehem mine, on the north side of Cinder Hill, at approximately 4,000 feet elevation.

CLAIMS: MO 1 to 19, MO Fraction.

OWNER: John McGoran.

OPERATOR: QUINTANA MINERALS CORPORATION, 1215, Two Bentall Centre, Vancouver V7X 1G4.

METALS: Copper, iron.

DESCRIPTION: The claims are underlain by Guichon quartz diorite and Hybrid quartz diorite of the Guichon Creek batholith covered in part by Kamloops Group volcanic rocks and glacial debris. Specular hematite and chalcopyrite mineralization occurs in a north-northwest-trending zone.

WORK DONE: Surface geological mapping, 1 inch equals 1,320 feet covering all claims; percussion drilling, one hole totalling 200 feet on MO 2; road construction, one-quarter mile on MO Fraction and MO 2 (drill hole access).

JOY, BLU (92I/NW-29, 30) (Fig. B, No. 143)

LOCATION: Lat. 50° 35′ Long. 121° 05′ (92I/11E)
KAMLOOPS M.D. The claims enclose the Glossy Crown grants and lie between Cinder Hill and Forge Mountain, at approximately 5,500 feet elevation.

CLAIMS: JOY 1 to 6, 8, 10, 12, JOY 1 and 2 Fractions, BLU 1 to 8, BLU 1 Fraction, JAY 1 to 6, JAY 1, 2, 4, and 6 Fractions, JO 1 to 11, JOE 1 to 15, JACK 1 to 8, JACK 1 to 3 Fractions, JAE 1 to 3 Fractions, BLUE 2 Fraction.

OWNER: Continental Cinch Mines Ltd.

OPERATOR: QUINTANA MINERALS CORPORATION, 1215, Two Bentall Centre, Vancouver V7X 1G4.

METALS: Copper, iron.

DESCRIPTION: The area is underlain mainly by Guichon phase quartz diorite covered in part by Kamloops Group volcanic rocks and by glacial debris. Specular hematite and copper minerals occur in west-northwest-trending veinlets with some tourmaline.

(92I/11E)

WORK DONE: Surface geological mapping, 1 inch equals 1,320 feet covering Joy, Jae, Jack and Blu claims; surface diamond drilling, two holes totalling 1,751 feet on Joe claims; percussion drilling, 10 holes totalling 2,750 feet on Joe, Blu, and Joy claims; road construction, 2 miles (access to drill holes).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 256, 257.

CHRIS, VAL (Fig. B, No. 144)

LOCATION: Lat. 50° 37′ Long. 121° 03′ (92I/11E)
KAMLOOPS M.D. North Highland Valley, on the northwest flank of Forge Mountain, at approximately 5,500 feet elevation.

CLAIMS: CHRIS and VAL, totalling 40.

OPERATOR: QUINTANA MINERALS CORPORATION, 1215, Two Bentall Centre, Vancouver V7X 1G4.

DESCRIPTION: The claims are underlain mainly by Kamloops Group volcanic rocks. One diamond-drill hole extended through the Kamloops cover to Guichon quartz diorite at a depth of 1,439 feet.

WORK DONE: Surface diamond drilling, one hole totalling 1,538 feet on Val 13; road construction, one-half mile (access to drill hole).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 226.

GEO (92I/NW-18) (Fig. B, No. 153)

LOCATION: Lat. 50° 44′ Long. 121° 02′ (92I/11E)
KAMLOOPS M.D. Two miles west-southwest of Walhachin, on Brassy Creek, at approximately 2,200 feet elevation.

CLAIMS: GEO 57 to 61, CHIEF 1 to 48, HASSO 3, 5 to 8, 15 to 21, URSUS 1 to 4.

OWNERS: Ursus Minerals Ltd. and Supertest Investments and Petroleum Limited.

OPERATOR: URSUS MINERALS LTD., 2610, 505 Fourth Avenue SW., Calgary, Alta.

METALS: Silver, copper, iron.

DESCRIPTION: Nicola Group volcanic rocks with limestone layers are intruded by a quartz diorite plug which is apparently an offshoot of the Guichon Creek batholith. These rocks are unconformably overlain by Jurassic conglomerates which are in turn unconformably overlain by Tertiary lavas of the Kamloops Group.

WORK DONE: Surface diamond drilling, six holes totalling 3,011 feet on Chief 14, 15, 25 and Geo 61; trenching, 150 feet on Chief 14 and 28.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 227.

KEV (Fig. B, No. 132)

LOCATION: Lat. 50° 45′ Long. 121° 07′ (92I/11E, 14E)
KAMLOOPS M.D. Seven miles east-northeast of Ashcroft, surrounding Separating Lake, at approximately 3,000 feet elevation.

(92I/11W)

CLAIMS: KEV 13 to 26, 55 to 68, 74 to 80.

OWNER: MUNDEE MINES LTD., 301, 540 Burrard Street, Vancouver V6C 2K3.

DESCRIPTION: The claims are underlain by Kamloops Group sedimentary and volcanic rocks of Tertiary age.

WORK DONE: Geochemical soil survey, 289 samples, approximately 6 line-miles covering Kev 19 and 21-24.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 227; Assessment Report 4650.

MARS (Fig. B, No. 127)

LOCATION: Lat. 50° 34' Long. 121° 18' (92I/11W)
KAMLOOPS M.D. Opposite Spatsum 10 miles north of Spences Bridge, on the west side of the Trans-Canada Highway, between 1,500 and 1,900 feet elevation.

CLAIMS: MARS 1 to 8.

OWNER: Murray Morrison.

OPERATOR: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METALS: Iron, minor gypsum and sulphur.

DESCRIPTION: The claims are underlain by quartz - sericite - talc - limonite gossan in andesitic and tuffaceous Cache Creek Group rocks. The gossan area is well mineralized with pyrite.

WORK DONE: Percussion drilling, three holes totalling 1,200 feet on Mars 2 and 5; road construction, 1,000 feet on Mars 5.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 228.

MAN (92I/NW-17, 34) (Fig. B, No. 129)

LOCATION: Lat. 50° 35' Long. 121° 17' (92I/11W)
KAMLOOPS M.D. Two miles south of Basque, on the east side of the Fraser River, from river level to 4,000 feet elevation.

CLAIMS: MAN 1 to 60.

OWNERS: R. G. Hawley and D. R. Morgan.

OPERATOR: MANTLE MINERALS LTD., c/o 4481 – 232nd Street, Langley.

METAL: Copper.

DESCRIPTION: The claims are underlain by volcanic and sedimentary rocks of the Cache Creek and Nicola Groups at the western contact of the Guichon Creek batholith. These older rocks were intruded first by quartz diorite of the Hybrid phase of the batholith then by a stock, the Spatsum porphyritic quartz monzonite. The stock was preferentially emplaced along the contact and separates the Hybrid and older rocks under most of the claim area. Limonitic gossans on the property have little or no remnant sulphides. The Spatsum stock, however, is reported to contain disseminated pyrite and some disseminated chalcopyrite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical soil survey, 1,000 samples taken at 100 by 400-foot grid spacing; linecutting, 20 miles of grid covering Man 47-60.

(92I/11W)

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 344; Assessment Reports 2840, 4586.

CORNWALL (Fig. B, No. 128)

LOCATION: Lat. 50° 42′ Long. 121° 26′ (92I/11W)
KAMLOOPS M.D. Seven miles southwest of Cache Creek on the north and east flanks of Cornwall Hills.

CLAIMS: CORNWALL 1 to 53, 75 to 106.

OWNER: LONE CREEK MINES LTD., 750, IBM Building, Calgary, Alta.

METAL: Copper.

DESCRIPTION: The claims are apparently underlain by rocks of the Permian Cache Creek Group and Marble Canyon Formation.

WORK DONE: Linecutting, 40 miles of grid; magnetometer survey, 36.5 line-miles covering Cornwall 1-10, 37-41, 87, 99, 100, 105, and 106.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 298; Assessment Reports 2947, 3380, 4550.

SALLUS (92I/NW-16) (Fig. B, No. 133)

LOCATION: Lat. 50° 47′ Long. 121° 48′ (92I/13W)
LILLOOET M.D. Ten miles northeast of Lillooet, on Gibbs and Sallus Creeks, between 2,000 and 5,500 feet elevation.

CLAIMS: Sixty-six SALLUS, 39 SALLUS CREEK, GIBBS 1 to 10, 26 to 29, CHUCK 1 to 16, 19, 20, HILL 1 to 3 Fractions.

OWNER: CANADIAN JOHNS-MANVILLE COMPANY LIMITED, 9, 219 Victoria Street, Kamloops.

METALS: Copper, molybdenum, gold, zinc.

DESCRIPTION: The Mount Martely granodiorite stock has cut limestone and black argillite of the Cache Creek Group. The rocks are unconformably overlain in the southern portion of the property by sedimentary rocks of the Spences Bridge Group. Chalcopyrite, bornite, malachite, and molybdenite occur in quartz veins and fractures in the granodiorite near its contact. Fine-grained sphalerite and chalcopyrite occur in lenses of argillite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Sallus 1-10; geochemical talus fines survey, approximately 1,100 samples, approximately 10 line-miles covering Sallus 1-10 and 117-124.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 229; Assessment Reports 4405, 4796.

AV (92I/NW-51) (Fig. B, No. 134)

LOCATION: Lat. 50° 28′ Long. 121° 32′ (92I/13E)
KAMLOOPS M.D. Seven and one-half miles northwest of Carquille, on Maiden Creek, at approximately 3,500 feet elevation.

(92I/13E)

CLAIMS: AV 5 to 10.
OWNER: JOHN McGORAN, 3091 West 3rd Avenue, Vancouver.
METAL: Gold.
DESCRIPTION: Gold occurs in conglomerate of the Tertiary Coldwater Group.
WORK DONE: Geological and geochemical surveys.
REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1901, p. 1091; Assessment Report 4304.

R (Fig. B, No. 210)

LOCATION: Lat. 50° 51' Long. 121° 32' (92I/13E)
KAMLOOPS M.D. On Highway 12 approximately 9.5 miles north 69 degrees west of Cache Creek junction and between Indian Reserves 1 and 2, at approximately 2,500 feet elevation.
CLAIMS: R 41 to 62.
OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.
DESCRIPTION: Hat Creek Valley in the area of the claims is underlain by sedimentary rocks of the Tertiary Coldwater Group.
WORK DONE: Surface diamond drilling, one hole, totalling 518 feet on R 49.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, pp. 228, 229.

PAW, SAM, RANGER (Fig. B, No. 135)

LOCATION: Lat. 50° 59' Long. 121° 00' (92I/13E, 14W)
KAMLOOPS and CLINTON M.D. Fifteen miles north-northwest of Cache Creek, on Highway 97 at Maiden Creek.
CLAIMS: PAW 1 to 43, PAW 3 to 5 Fractions, SAM 1 to 25, RANGER 1 to 37, 45 to 48, RANGER 1 to 10, 13, 15, 18 Fractions, GW 1 to 13, 15, 17.
OWNER: W. Walodarsky.
OPERATOR: PEYTO OILS LTD., 335, 805 Fifth Street SW., Calgary, Alta.
DESCRIPTION: The claims are underlain on the west by rocks of the Permian Cache Creek Group and on the east by rocks of the Tertiary Coldwater Group.
WORK DONE: Percussion drilling.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 229.

BEAU (Fig. B, No. 138)

LOCATION: Lat. 50° 49' Long. 121° 21' (92I/14W)
KAMLOOPS M.D. One mile northwest of Cache Creek, on the southeast side of Indian Reserve 3, between 1,600 and 2,700 feet elevation.
CLAIMS: BEAU 1 to 28.
OWNER: ACROLL OIL & GAS LTD., 574, 330 Fifth Avenue SW., Calgary, Alta.

(92I/14W)

DESCRIPTION: The claims overlie Permian Cache Creek Group rocks which here consist of argillites, cherts, thin limestone, and greenstone with an upper unit of massive crystalline limestone.

WORK DONE: Linecutting, 5.7 miles of grid; geochemical soil survey, 148 samples taken at 200 by 750-foot grid spacing covering Beau 5-16.

REFERENCE: Assessment Report 4566.

RENE (Fig. B, No. 137)

LOCATION: Lat. 50° 49' Long. 121° 23' (92I/14W)
KAMLOOPS M.D. Two miles west of Cache Creek, on the south side of Indian Reserve 3A, between 2,000 and 4,000 feet elevation.

CLAIMS: RENE 1 to 32.

OWNER: ACROLL OIL & GAS LTD., 574, 330 Fifth Avenue SW., Calgary, Alta.

DESCRIPTION: The claims are underlain by rocks of the Permian Cache Creek Group of argillites, cherts, limestones, and greenstones.

WORK DONE: Linecutting, 8.5 miles of grid; geochemical soil survey, 502 samples taken at 100 by 500-foot grid spacing covering Rene 9-18.

REFERENCE: Assessment Report 4583.

MAGGIE MINE (92I/NW-15) (Fig. B, No. 206)

LOCATION: Lat. 50° 55.5' Long. 121° 25.5' (92I/14W)
KAMLOOPS M.D. Eight and nine-tenth miles north 27 degrees west of Cache Creek junction in the Bonaparte Valley on the west side of Highway 97, at approximately 1,700 feet elevation.

CLAIMS: Mineral Lease M-33 (Lots 410 to 421), BETH 1, 3, M 5, 8, 10, 12 to 14, 17 to 21, 23, 34 to 38, 42 to 46, 48, 57, 71 to 78, 84 to 90, 92 to 95, 97, 99 to 108, 113, 114, M 59 and 80 Fractions, MAG 41, 141, 151, 161, 171, MM 1 to 22 Fractions.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

METALS: Copper, molybdenum.

WORK DONE: Topographic mapping, 1 inch equals 200 feet covering 6 square miles.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 232.

S, B (Fig. B, No. 207)

LOCATION: Lat. 50° 58' Long. 121° 27.5' (92I/14W)
KAMLOOPS M.D. Twelve and four-tenth miles north 28 degrees west of Cache Creek junction near the intersection of Highway 97 and the Loon Lake road, at approximately 1,800 feet elevation.

CLAIMS: S 1 to 28, 31, 33, 35, 37, S 1 and 2 Fractions, B 1 to 39.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

(92I/14W)

DESCRIPTION: The hole intersected chert, argillite, and greenstone of the Cache Creek Group throughout its entire length. Some pyrite mineralization was encountered.

WORK DONE: Surface diamond drilling, one hole totalling 503 feet on S 5.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 233, 234.

M, T (Fig. B, No. 208)

LOCATION: Lat. 50° 52′ Long. 121° 24′ (92I/14W)
KAMLOOPS M.D. Five and six-tenth miles north 36 degrees west of Cache Creek junction and approximately 1 mile south of the junction of Highways 97 and 12, at approximately 1,600 feet elevation.

CLAIMS: M 115 to 161, MA 41 and 42 Fractions, T 1 to 20, R 27 to 32, 50, 51.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

DESCRIPTION: The holes intersected various members of the Cache Creek Group, mainly chert and argillite. Weak pyrite mineralization was present in much of the core.

WORK DONE: Surface diamond drilling, four holes totalling 1,909 feet on T 14, M 122, 135, and 140.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 231.

MO (Fig. B, No. 209)

LOCATION: Lat. 50° 54′ Long. 121° 27′ (92I/14W)
KAMLOOPS M.D. Eight miles north 45 degrees west of Cache Creek junction, on the north side of Bonaparte Indian Reserve 2, at approximately 2,100 feet elevation.

CLAIMS: MO 1 to 70, MO 80 to 82 Fractions, R 1 Fraction, R 1, 3 to 30, 37, 39, 40.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

DESCRIPTION: The claims are underlain by rocks of the Cache Creek Group.

WORK DONE: Surface diamond drilling, one hole totalling 600 feet on MO 48.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 325.

R, V, GILL (Fig. B, No. 136)

LOCATION: Lat. 50° 59′ Long. 121° 23′ (92I/14W; 92P/3W)
KAMLOOPS M.D. On Scottie Creek, 3 miles above the Bonaparte River. The claims surround the Scottie Creek Crown-granted claims which cover a chromium deposit.

CLAIMS: R 1 to 30, V 1 to 20, GILL 1 to 12.

OWNER: ROCKET MINES LTD., 508, 789 West Pender Street, Vancouver.

METAL: Chromium.

(92I/14E)

DESCRIPTION: The Permian Cache Creek Group greenstone and argillite units are unconformably overlain on the north and east sides of the claim group by Miocene plateau basalts.

WORK DONE: Airborne magnetometer survey, approximately 70 line-miles covering the R and V claims at a flight spacing of 500 feet. The area covered by the survey measures 20,000 feet by 6,500 feet. The central part of the survey also covered a number of Crown-granted claims (Lots 3532 to 3539).

REFERENCE: Assessment Report 4454.

PYRITE, (Fig. B, No. 140)

LOCATION: Lat. 50° 45' Long. 121° 11' (92I/14E)
KAMLOOPS M.D. Five and one-half miles east-northeast of Ashcroft, on the south side of the Thompson River.

CLAIMS: PYRITE 1 and 2.

OWNER: A. A. ABLETT, 1714 Clifford Avenue, Kamloops.

WORK DONE: Linecutting, 1.2 miles of grid.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 362; Assessment Report 4594.

Y, MUD (Fig. B, No. 211)

LOCATION: Lat. 50° 46' Long. 121° 13' (92I/14E)
KAMLOOPS M.D. Four miles northeast of Ashcroft, on the north side of the Thompson River, at approximately 2,000 feet elevation.

CLAIMS: Y 3 to 10, 13 to 22, 31 to 42, 149 to 152, MUD 4 to 9.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

METAL: Copper.

DESCRIPTION: The diamond-drill hole penetrated various volcanic flows to a depth of 497 feet where a grey limestone was encountered. This was cut off by a fault zone at 507 feet below which volcanic rocks continued to the end of the hole. The volcanic rocks consisted of breccia and porphyritic and reddish brown flows showing various degrees of epidote-chlorite alteration. Rare chalcopyrite was observed below the fault zone but elsewhere pyrite was the only sulphide noted.

WORK DONE: Surface diamond drilling, one hole totalling 531 feet on Mud 4.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 348 (MUD).

FAIRVIEW, P&L (92I/NW-37, 52) (Fig. B, No. 141)

LOCATION: Lat. 50° 47' Long. 121° 01' (92I/14E)
KAMLOOPS M.D. One mile northeast of Anglesey, at approximately 2,000 feet elevation.

(92I/14E)

CLAIMS: P&L 1 to 10, ED 1 to 6, LUCKY 1 to 6, PAR 1 to 4, HUSKY 1 to 19, BOZO 1, 4, and 5.

OWNERS: M. Hurd, T. A. Winters, and J. R. Ashdown.

OPERATOR: NORTHLAND MINES LTD., 1130, 700 West Georgia Street, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: A deep gully, locally called Cabin Gulch, separates intrusive rocks on the west from red to purple Kamloops Group volcanic rocks on the east. The claims cover the old Fairview showing. Pyrite, chalcopyrite, and malachite are fairly widespread in veins, fine stockworks, and disseminations. Sphalerite occurs locally.

WORK DONE: Linecutting, 17.4 miles of grid and magnetometer survey covering P&L 1-10, Lucky 1-2, ED 1-6, and Husky 1.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, p. 148 (ED, A&H, TOGO); *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 230; *Geol. Surv., Canada,* Mem. 262, p. 107; Assessment Report 4718.

MARDI (Fig. B, No. 139)

LOCATION: Lat. 50° 48′ Long. 121° 05′ (92I/14E)
KAMLOOPS M.D. Eleven miles east of Cache Creek, on and north of the Trans-Canada Highway, between 1,400 and 3,200 feet elevation.

CLAIMS: MARDI 7 to 10, 13 to 40.

OPERATORS: ACHERON MINES LTD., 107, 325 Howe Street, Vancouver and CREAM SILVER MINES LTD., 9th Floor, 850 West Hastings Street, Vancouver.

DESCRIPTION: The property is underlain by Late Triassic Nicola Group volcanic rocks which have been intruded on the west by quartz diorite, possibly an offshoot of the Guichon Creek batholith. To the north, Miocene volcanic rocks unconformably overlie the older rocks.

WORK DONE: Magnetometer survey, approximately 20 line-miles.

REFERENCE: Assessment Report 4303.

KB (Fig. B, No. 185)

LOCATION: Lat. 50° 46′ Long. 120° 33′ (92I/15E)
KAMLOOPS M.D. Three miles north-northwest of Tranquille.

CLAIMS: KB 1 to 15.

OWNER: GREEN BLUFF COPPER MINES LTD., 534, 789 West Pender Street, Vancouver.

DESCRIPTION: The claims are underlain by tuff, andesite, basalt, agglomerate, and breccia of the Kamloops Group.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet.

REFERENCE: Assessment Report 4309.

DV (Fig. B, No. 184)

LOCATION: Lat. 50° 46′ Long. 120° 37′ (92I/15E)
KAMLOOPS M.D. On the north side of Kamloops Lake, 1.5 miles north of Frederick, between 2,000 and 2,400 feet elevation.

CLAIMS: DV 1 to 30, 33 to 46, 49 to 56, KB 44 to 76, GATE 1 to 4, BULL 1 to 3 Fractions.

OWNER: Cream Silver Mines Ltd.

OPERATOR: CELTIC MINERALS LTD., 107, 325 Howe Street, Vancouver.

DESCRIPTION: The property is underlain by volcanic rocks of the Nicola and Kingsvale Groups and by a section of the Iron Mask batholith.

WORK DONE: 1972 – surface geological mapping, magnetometer and IP surveys, and geochemical survey, 774 samples, covering DV 1-16, 17-30, 33-36 and Bull 1-3 Fractions.

REFERENCES: Assessment Reports 4219, 4220.

CAT, PAM (Fig. B, No. 180)

LOCATION: Lat. 50° 52′ Long. 120° 33′ (92I/15E)
KAMLOOPS M.D. Two and one-half miles southeast of Sydney Lake, on Cannell Creek, between 3,500 and 4,500 feet elevation.

CLAIMS: CAT 1 to 12, 20, 22, 24, PAM 27 to 29, 31, 32.

OWNER: V.M.L. HOLDINGS LTD. (formerly Grand Prix Resources Ltd.), 320, 475 Howe Street, Vancouver.

WORK DONE: Magnetometer and VLF EM surveys, 10 line-miles covering Cat 1-8, 22, 24 and Pam 27-29.

REFERENCE: Assessment Report 4218.

ALLIES (92I/NE-44) (Fig. B, No. 183)

LOCATION: Lat. 50° 52′ Long. 120° 34′ (92I/15E)
KAMLOOPS M.D. Ten miles north-northwest of Tranquille, 1 mile southeast of Sydney Lake, on Cannell Creek, at approximately 4,700 feet elevation.

CLAIMS: DOG 103 to 132.

OWNER: BON-VAL MINES LTD., 515, 602 West Hastings Street, Vancouver V6B 1P2.

METALS: Gold, copper, lead.

DESCRIPTION: The property is underlain by Middle Eocene volcanic rocks of the Kamloops Group, which overlay unconformably Upper Paleozoic metasedimentary rocks of the Cache Creek Group and some dykes that carry gold, copper, and lead mineralization.

WORK DONE: Magneotometer and VLF EM survey, 20.4 line-miles covering Dog 103-112, 114-118, 120, 123-131; filtering of Government aeromagnetic maps covering all claims; geochemical soil survey, 240 samples, 4.7 line-miles covering Dog 103-108, 118, 120, 123, 124, 126, 130.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 234; Assessment Report 4546.

T, ZEKE (Fig. B, No. 186)

LOCATION: Lat. 50° 54' Long. 120° 33' (92I/15E)
KAMLOOPS M.D. Twelve miles north of Tranquille, at the headwaters of Watching and Cannell Creeks, between 4,800 and 5,200 feet elevation.
CLAIMS: T 1 to 30, ZEKE 11 to 30.
OPERATOR: SPARTAN EXPLORATIONS LTD., 3165 Dunbar Street, Vancouver.
DESCRIPTION: The claims are underlain by Middle Eocene andesitic-basaltic volcanic flows and pyroclastic rocks of the Kamloops Group.
WORK DONE: Surface geological mapping, 1 inch equals 750 feet covering T 1-30; ground magnetometer survey, 9 line-miles covering Zeke 11-30.
REFERENCES: Assessment Reports 4310, 4407.

ZEKE, CAT (Fig. B, No. 182)

LOCATION: Lat. 50° 54' Long. 120° 35' (92I/15E)
KAMLOOPS M.D. The property is centred 1 mile east of Andrus Lake.
CLAIMS: ZEKE 1 to 10, CAT 25 to 40, PAM 1, 25, 33, 34, RAT 10, 12 to 14, 16.
OPERATOR: T & C MANAGEMENT LTD., 520, 602 West Hastings Street, Vancouver.
WORK DONE: Geochemical soil survey, 502 samples taken at 100 by 400-foot grid spacing and magnetometer and VLF EM survey, 10 line-miles covering Cat 25-34 and Zeke 1-4, 6, 8.
REFERENCES: Assessment Reports 4307, 4770.

PAM (Fig. B, No. 181)

LOCATION: Lat. 50° 54' Long. 120° 37' (92I/15E)
KAMLOOPS M.D. Thirteen miles north-northwest of Tranquille, surrounding Strachan Lake.
CLAIMS: PAM 3 to 24.
OPERATOR: ALBERTA PETROLEUM & RESOURCES LTD., Box 6240, Station D, Calgary, Alta.
DESCRIPTION: The area is underlain by Middle Eocene volcanic rocks of the Kamloops Group, which overlay unconformably Upper Paleozoic metasedimetnary rocks of the Cache Creek Group and some dykes that carry gold, copper, and lead mineralization.
WORK DONE: Magnetometer and VLF EM survey, 15.6 line-miles covering Pam 3-24.
REFERENCES: Assessment Reports 4308, 4617.

BEN (Fig. B, No. 187)

LOCATION: Lat. 50° 46' Long. 120° 28' (92I/16W)
KAMLOOPS M.D. Four miles north-northeast of Tranquille.
CLAIMS: BEN 1 to 20.

(92I/16W)

OWNER: A. Johnston.

OPERATORS: FLINT ROCK MINES LIMITED, KALLIO MINES LIMITED, and CAT LAKE MINES LIMITED, 507, 55 Yonge Street, Toronto, Ont.

WORK DONE: 1972 – magnetometer and SP surveys, 20 line-miles.

REFERENCE: Assessment Report 4439.

HOMESTAKE, MOLLY GIBSON (92I/NE-82 to 85, 89 to 91) (Fig. B, No. 188)

LOCATION: Lat. 50° 54′ Long. 120° 18′ (92I/16W)
KAMLOOPS M.D. The property is centred 2 miles up Jamieson Creek from the North Thompson River.

CLAIMS: DIANE, CHE, CHA, TREE, MARK, totalling 114.

OWNERS: T. Rolston and P. Burjoski.

OPERATOR: ALBERTA PETROLEUM & RESOURCES LTD., Box 6240, Station D, Calgary, Alta.

METALS: Gold, silver, lead, zinc.

DESCRIPTION: The claims cover several old gold showings named the Homestake, Molly Gibson, Francis, Alexander, Shufly Central, Shufly North, and Polestar.

WORK DONE: 1972 – airborne magnetometer and VLF EM survey, 84 line-miles at a 500-foot separation.

REFERENCES: *Geol. Surv., Canada,* Mem. 249; Assessment Report 4406.

AJS (92P-50) (Fig. C, No. 71)

LOCATION: Lat. 51° 00′ Long. 120° 27′ (92P/1W; 92I/16W)
Report on this property in section 92P/1W.

IRON RANGE (92I/NE-96) (Fig. B, No. 190)

LOCATION: Lat. 50° 50′ Long. 120° 03′ (92I/16E)
KAMLOOPS M.D. On the north side of Heffley Lake, 1 mile east of the east end, at approximately 3,200 feet elevation.

CLAIMS: NAN 1 and 2.

OWNER: WESTERN CANADA STEEL LIMITED, 450 Southeast Marine Drive, Vancouver.

METALS: Iron, copper.

DESCRIPTION: The claims are underlain by Upper Paleozoic metavolcanic rocks intruded by bodies of gabbro.

WORK DONE: Magnetometer survey and EM-16 surveys, approximately 1.5 line-miles each and linecutting covering Nan 1 and 2.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, p. 137 (HAL); *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 319 (NAN); *Geol. Surv., Canada,* Mem. 249, p. 143; Assessment Reports 820, 821, 2597, 4418, 4624.

EVE (Fig. B, No. 189)

LOCATION: Lat. 50° 51′ Long. 120° 05′ (92I/16E)
KAMLOOPS M.D. On the north side of Heffley Lake, one-half mile east of the west end.

CLAIMS: EVE 1 to 3, 5, 6, and 9.

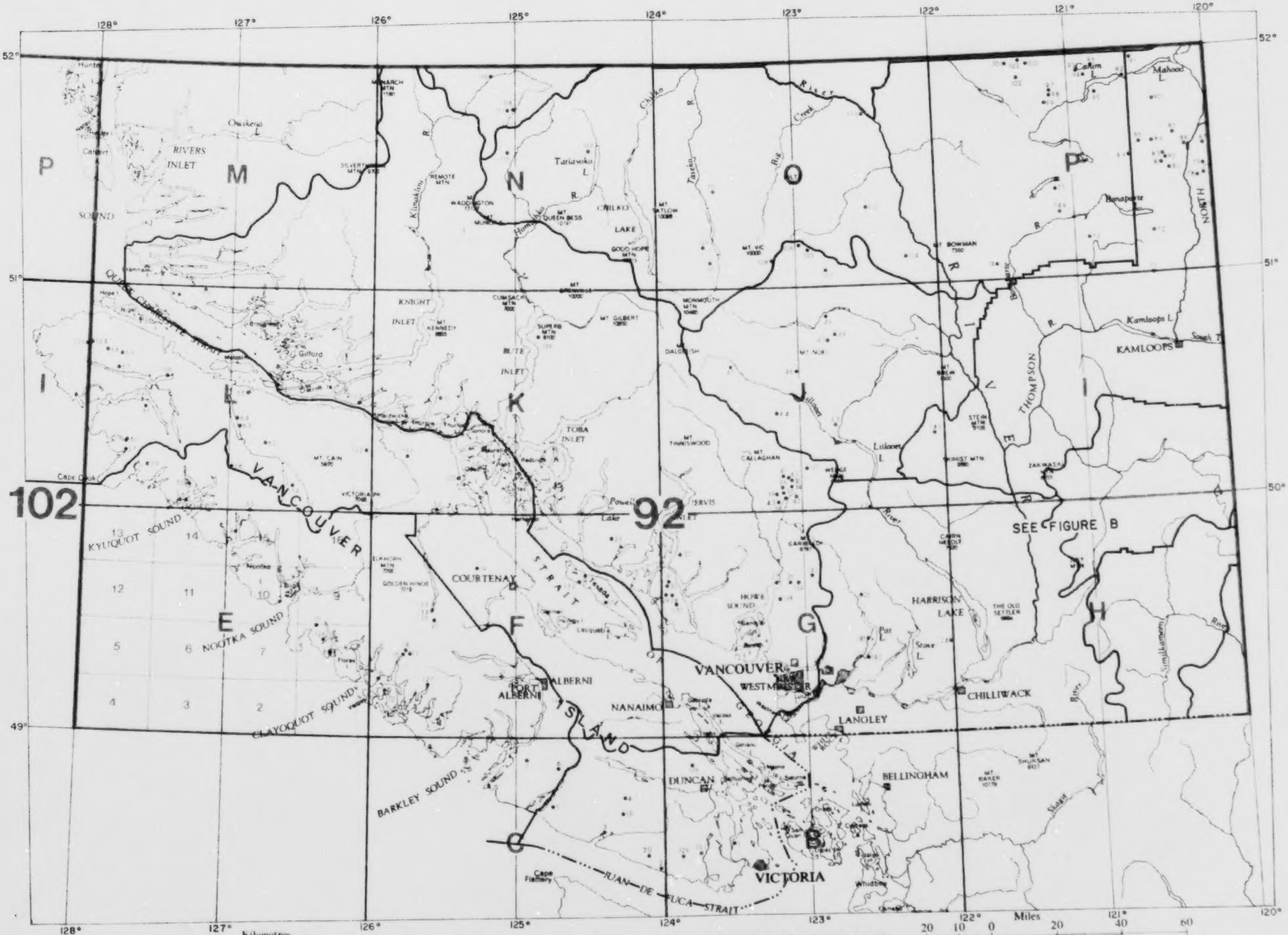
OWNER: WESTERN CANADA STEEL LIMITED, 450 Southeast Marine Drive, Vancouver.

METALS: Copper, iron.

DESCRIPTION: The claims are underlain by Upper Palaeozoic metavolcanic and metasedimentary rocks intruded by bodies of gabbro.

WORK DONE: Ground magnetometer and EM-16 surveys, approximately 1 line-mile each and linecutting covering Eve 3, 5, 6, and 9.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, p. 137 (HAL); *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 320; Assessment Reports 820, 821, 2600, 4418, 4624.



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BUTE INLET
TOBA INLET
Tatlayoko L
CHILKO LAKE
MT WADDINGTON
MT QUEEN BESS
MONARCH MTN
SILVERTIP MTN
REMOTE MTN
MT TATLOW
MT VIC
MT BOWMAN
MT GILBERT
MONMOUTH MTN
MT DALGLEISH
MT NOEL
MT BREW
STEIN MTN
SUPERB MTN
MT KENNEDY
CUMSACK MTN
MT TINNISWOOD
MT CALLAGHAN
MT CAIN
VICTORIA PK
ELKHORN MTN
GOLDEN HINDE
MT GARIBALDI
CAIRN NEEDLE
THE OLD SETTLER
MT BAKER
MT SHUKSAN
Mahood L
Bonaparte
NORTH
Kamloops L
KAMLOOPS
THOMPSON
FRASER RIVER
Lillooet
Lillooet L
ZAKWASKI
SEE FIGURE B
HARRISON LAKE
Pitt L
Stave L
CHILLIWACK
Similkameen
River
QUEEN CHARLOTTE STRAIT
VANCOUVER ISLAND
Cape Cook
KYUQUOT SOUND
NOOTKA SOUND
CLAYOQUOT SOUND
BARKLEY SOUND
COURTENAY
ALBERNI
PORT ALBERNI
NANAIMO
DUNCAN
VICTORIA
VANCOUVER
NEW WESTMINSTER
LANGLEY
BELLINGHAM
STRAIT OF GEORGIA
JUAN DE FUCA STRAIT
Cape Flattery
Powell Lake
JERVIS INLET
HOWE SOUND
Texada I
Lasqueti I
Gilford
Whidbey
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5
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7
8
4
3
2
1
Kilometres
50
0
50
100
Miles
20
10
0
20
40
60

Figure C INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 92 AND PART OF 102

KEY TO PROPERTIES ON INDEX MAP, FIGURE C.

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SOUTHWEST BRITISH COLUMBIA
(NTS Division 92 and part of 102 Figure C)

VICTORIA 92B

JILL (92B-101) (Fig. C, No. 130)

LOCATION: Lat. 48° 29' Long. 123° 46' (92B/5W)
VICTORIA M.D. Two and one-half miles due west of Leechtown on the south slope of Mount Jack, at approximately 1,800 feet elevation.

CLAIMS: JILL 1 to 30, JILL 1 Fraction.

OWNER: LEECH RIVER MINES LTD., 102, 1765 Duchess Avenue, West Vancouver.

METAL: Copper.

DESCRIPTION: A stock, said to be of syenitic composition, has intruded Metchosin Formation basalt in the claim area. Chalcopyrite with minor pyrite and pyrrhotite occur in veinlets and as disseminations. The mineralization appears to be related to the stock but is modified by faulting.

WORK DONE: Linecutting and IP survey, 0.7 line-mile covering Jill 5-8.

REFERENCE: Assessment Report 4744.

BEAR CREEK (92B-100) (Fig. C, No. 129)

LOCATION: Lat. 48° 29' Long. 123° 52' (92B/5W)
VICTORIA M.D. Between Sooke and Jordan Rivers, centred 10 miles northwest of Sooke, at approximately 2,000 feet elevation.

CLAIMS: Mining agreements 71 and 72 (approximately 22 square miles) on Esquimalt and Nanaimo Railway land grants.

OWNERS: CanPac Minerals Limited and Rio Alto Exploration Ltd.

OPERATOR: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver V6C 1N5.

METAL: Copper.

DESCRIPTION: The claim area is underlain by Metchosin Formation basalt which has been intruded by small bodies of gabbro, granodiorite, and aplite. These rocks are bounded on the north by the Leech River fault. Mineralization consists of disseminated pyrite and chalcopyrite in patches and in thin veinlets.

WORK DONE: Surface geological mapping, 1 inch equals 1,320 feet; geochemical silt survey, 20 samples.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 239.

KINKAM (92B-99) (Fig. C, No. 1)

LOCATION: Lat. 48° 32' Long. 123° 32' (92B/12E)
VICTORIA M.D. On the east shore of Finlayson Arm, on the south slope of Jocelyn Hill, at approximately 1,000 feet elevation.

CLAIMS: KINKAM 1 to 16, Mineral Lease M-16 (MERYL, Lot 90).

(92B/13W)

OWNERS: Armside Mining Ltd. and G. Kinneard.

OPERATOR: ARMSIDE MINING LTD., c/o Campney & Murphy, 1030 West Georgia Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The predominant rock type is dark gabbro-gneiss derived from sedimentary and volcanic rocks of the Vancouver Group. This rock unit has been intruded by andesite dykes. An old adit driven in a rusty material on the Kinkam 1 and 3 claims has exposed pyrite, pyrrhotite, and ilmenite, with traces of copper and molybdenum mineralization.

WORK DONE: Photogeological survey, approximately 6 square miles; reconnaissance magnetometer survey, approximately 1 line-mile; geochemical soil survey, 90 samples taken over approximately 1.5 miles of reconnaissance lines on Kinkam 1, 2, 4, 9 to 12.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 240; Assessment Reports 3675, 3952, 4469.

VICTORIA, COPPER CANYON (92B-4, 86) (Fig. C, No. 128)

LOCATION: Lat. 48° 52' Long. 123° 49' (92B/13W)
VICTORIA M.D. On Chemainus River, 5.5 miles southwest of Chemainus.

CLAIMS: Mineral Lease M-19 comprising VICTORIA (Lot 21G), COPPER CANYON (Lot 22G), SUSAN (Lot 23G), KLONDYKE (Lot 68G), VICTORIA FR. (Lot 90G), and ELMOORE FR. (Lot 91G) and the located claims COPPER MINT 1 to 3.

OWNERS: A.B.C. Whittles, F. C. Loring, and G. E. Kinneard.

OPERATOR: VIVA VENTURES LIMITED, c/o G. E. Kinneard, 8, 94 Commercial Street, Nanaimo.

METALS: Copper, minor silver and gold.

DESCRIPTION: On the Copper Canyon claim chlorite schists are interbanded with metavolcanic rocks. Both rocks are cut by quartz veins carrying massive and disseminated pyrite; some also carry minor chalcopyrite. On the Klondyke claim to the west chlorite schist is cut by a 6-inch pyrite-bearing quartz vein.

WORK DONE: Linecutting; 2 line-miles of elevation profiles; 800 line-feet of gravity survey; 300 line-feet of time-domain IP survey; 5,700 line-feet of 'shoot-back' EM survey; 2,500 line-feet of magnetometer survey; two seismic profiles; 900 line-feet of SP survey; 3.6 line-miles of VLF EM survey; geological mapping, 1 inch equals 100 feet.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1902, pp. 239, 252, 253; 1928, pp. 365, 366; Assessment Reports 3099, 4626.

CAPE FLATTERY 92C

SUNRO MINE (92C-73) (Fig. C, No. 2) By W. C. Robinson

LOCATION: Lat. 48° 26.5′ Long. 124° 02′ (92C/8E)
VICTORIA M.D. One mile north of the mouth of Jordan River.

CLAIMS: Approximately 50 Crown-granted claims including SUNLOCH, GABBRO, and VULCAN and the located claims COOK 1 to 20, RED 1 to 14, SUN 1 and 2 Fractions, and GAB 2, 3, and 4 Fractions.

OWNER: Pechiney Development Limited. (This company has an operating lease from Sunro Mines Ltd. to mine on 51 contiguous claims, which cover the Cave, Central, and River ore zones.)

OPERATOR: JORDAN RIVER MINES LTD., 744 West Hastings Street, Vancouver.

METALS: Copper, iron (production shown in Table I).

DESCRIPTION: Copper mineralization occurs in shear zones in the Metchosin Formation volcanic rocks close to a sill-like mass of Sooke gabbro.

WORK DONE: Surface and underground workings surveyed; underground geological mapping, 1 inch equals 20 feet covering Sunloch 6, Gabbro, and Gabbro Fraction; drifting and crosscutting, 2,927 feet; raising, 886 feet; underground diamond drilling, 108 holes totalling 19,051 feet on Sunloch 6, Gabbro, and Gabbro Fraction. A ventilation raise was driven from 5100 level to 5200 level and the ramp, being driven at 11.5 degrees, was advanced 682 feet between 5300 and 5400 levels.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1950, pp. 180-193; 1962, pp. 127-129; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 240, 241.

LOSS, WOLF (92C-108, 94) (Fig. C, No. 20)

LOCATION: Lat. 48° 29′ Long. 124° 06′ (92C/8E)
VICTORIA M.D. Along the south sides of Loss and Rough Creeks, centred 5 miles northwest of River Jordan.

CLAIMS: LOSS 1 to 105, 129 to 179, WOLF 1 to 12.

OWNER: G. E. White.

OPERATOR: RIVER JORDAN SYNDICATE, c/o G. E. White, 925 Beckwith Road, Richmond.

METAL: Copper.

DESCRIPTION: Hornblendite and associated mineralization occur in northwesterly and in northeasterly trending shear zones cutting Tertiary gabbro and Metchosin volcanic rocks.

WORK DONE: Linecutting; VLF EM survey, 5 line-miles; geochemical soil survey, 145 samples taken at 200 by 400-foot grid spacing covering Loss 85, 86, 103, 104, 174, 176-179.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 241; Assessment Report 4751.

VAL (92C-89) (Fig. C, No. 3)

LOCATION: Lat. 48° 35′ Long. 124° 23′ (92C/9W)
VICTORIA M.D. Three miles northeast of Port Renfrew at approximately 300 feet elevation.

CLAIMS: VAL 1 to 14, SUE 1 to 6, 11 to 13, CATY 2 to 8, 11 to 24, ED 6, LELLA 1 to 10.

OWNER: PERBELL MINES LTD., 1700, 777 Hornby Street, Vancouver.

METAL: Copper.

DESCRIPTION: Disseminated chalcopyrite, pyrite, and pyrrhotite have been observed in shale and near shale-tuffaceous andesite contacts.

WORK DONE: Geochemical soil survey, 350 samples covering Caty 2-8, 12, 14, 16, 18, 20, 22, 24, Sue 1-6, 11-13, Ed 6, and Val 1-14; trenching, 600 feet on Lella 1 and Caty 2 and 4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 242; Assessment Report 4359.

REKO (92C-90, 91) (Fig. C, No. 131)

LOCATION: Lat. 48° 39′ Long. 124° 18′ (92C/9W)
VICTORIA M.D. Approximately 8 miles northeast of Port Renfrew, on Renfrew Creek, at 1,200 feet elevation.

CLAIMS: REKO 1 to 66, KESTREL 1 to 15.

OWNER: REAKO EXPLORATIONS LTD., 118, 815 West Hastings Street, Vancouver V6C 1B4.

METALS: Iron, copper.

DESCRIPTION: The claims are underlain by volcanic and sedimentary rocks of the Vancouver Group which have been cut by Island intrusions. The limy members have been recrystallized to marble, and skarn zones were formed which contain magnetite, pyrite, pyrrhotite, and chalcopyrite.

WORK DONE: Magnetometer survey, 25 line-miles covering Reko 1, 2, 9, 10, 19, 28, 30, 38, 42; IP survey, 12 line-miles covering Reko 1-4; surface diamond drilling, 86 holes totalling 13,391 feet on Reko 3, 4, 9, 10, and 42; trenching, 4,000 cubic feet on Reko 9.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 242, 243.

DL (Fig. C, No. 4)

LOCATION: Lat. 48° 43′ Long. 124° 16′ (92C/9W)
VICTORIA M.D. Twelve miles north-northeast of Port Renfrew, at the headwaters of Harris Creek, at approximately 2,500 feet elevation.

CLAIMS: DL 1 to 10.

OWNER: NEW COSMIC INDUSTRIES LTD., 420, 475 Howe Street, Vancouver.

METAL: Copper.

DESCRIPTION: Pyroclastic andesite and intercalated limestone and argillite have been intruded by dykes of diabase, and dykes and small stocks of diorite. Minor pyrrhotite and chalcopyrite occur with magnetite in shear zones in andesite on DL 1.

WORK DONE: Linecutting, approximately 8 line-miles on DL 1-4 and 7-10; surface geological mapping, 1 inch equals 200 feet; geochemical survey, 213 soil samples and 7 silt samples taken at 100 by 400-foot grid spacing; magnetometer survey, 4.5 line-miles covering DL 1-4.

REFERENCES: Assessment Reports 4468, 4792.

EBB (92C-77) (Fig. C, No. 5)

LOCATION: Lat. 48° 42' Long. 124° 46' (92C/10)
VICTORIA M.D. At Doobah, Cheewhat, and Sprise Lakes, 1.5 miles east of Nitinat Lake, between sea-level and 400 feet elevation.

CLAIMS: EBB (12 claims), TIDE 1 to 20, 24 to 29, IT 1 to 24.

OWNER: DOOBAH MINING LTD., Box 802, Kelowna.

METALS: Copper, silver, zinc.

DESCRIPTION: The northern half of the property is underlain by coarse-grained, leucocratic quartz monzonite. The southern half is underlain by several units of hybrid quartz diorite of varied texture and composition which contains small pendants and abundant xenoliths of volcanic rock and lesser skarn. Chalcopyrite, sphalerite, pyrite, and pyrrhotite occur as disseminations and fracture fillings, and in xenoliths of skarn.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and 1 inch equals 50 feet covering Tide 3, 4, 6, 7, 10, 28, 29, It 5, 7, 9, 11, and four Ebb claims; airborne magnetometer survey, 96 line-miles covering all claims; IP survey, 6.2 line-miles partially covering the same claims as the geological survey; linecutting.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 256, 257; Assessment Report 4690.

BUS (92C-97) (Fig. C, No. 7)

LOCATION: Lat. 48° 55' Long. 124° 57' (92C/15W)
ALBERNI M.D. One mile north of Sarita River and 2 miles west of Sarita Lake, on the south side of Mount Blenheim, between 100 and 1,000 feet elevation.

CLAIMS: BUS 1 to 8.

OWNERS: W. Waters and K. Buchanan.

OPERATOR: WESTERN MINES LIMITED, Box 8000, Campbell River.

METALS: Copper, iron.

DESCRIPTION: Pods and lenses of pyrite, chalcopyrite, magnetite, and pyrrhotite mineralization occur in skarnified sheared andesite. Skarnification extends over a horizontal distance of approximately 50 feet within the andesite.

(92C/15E)

WORK DONE: Reconnaissance geological and geochemical surveys over 12.5 line-miles, sampling at 200-foot intervals.

REFERENCE: Assessment Report 4357.

NI (92C-92) (Fig. C, No. 6)

LOCATION: Lat. 48° 53' Long. 124° 42' (92C/15E)
ALBERNI M.D. On the west bank of the Little Nitinat River, 4.5 miles north of the north end of Nitinat Lake, at approximately 1,000 feet elevation.

CLAIMS: NI 1 to 12, 21 to 30, NI 1 to 4 Fractions.

OWNER: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.

METALS: Copper, lead, zinc.

DESCRIPTION: The claims are underlain by andesite, basalt, breccia, and limestone of the Vancouver Group which have been cut by basalt dykes. The rocks have been locally intensely altered as expressed by sericite, chlorite, carbonate, and silica and are cut by two major faults. Bornite, chalcopyrite, galena, sphalerite, and pyrite occur in small fractures and faults.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering NI 21-30; IP and magnetometer surveys, 6 line-miles covering selected claims; geochemical survey, 231 soil samples, 5 line-miles and 70 rock samples, 3 line-miles covering mainly NI 21-30.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 260, 261; Assessment Reports 2019, 4279.

NOOTKA 92E

SYDNEY, SYD, ACCESS (92E-39, 55, 56) (Fig. C, No. 8)

LOCATION: Lat. 49° 23' Long. 126° 16' (92E/8W)
ALBERNI M.D. One mile north of Hot Springs Cove, at approximately 700 feet elevation.

CLAIMS: SYD 1 to 21, ACCESS 1 to 6, HOT 7 to 10, 26, 28, 31, 32, SC 3 and 4 Fractions, MATHEW Fraction, MATHEW 1 and 2 Fractions.

OWNERS: Florex Mining Co. Ltd. and Sam Craig.

OPERATOR: WESTERN MINES LIMITED, Box 8000, Campbell River.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite, pyrite with minor bornite, and molybdenite occur in fractures in a multiphase Tertiary stock of diorite to granodiorite composition. Mineralization has been examined on the Syd 3, 5, and 11 and on Access 2 claims.

WORK DONE: IP survey, 4 line-miles, 400-foot spacing, covering Syd 11 and 12 and Access 1 to 6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 262; Assessment Report 4402.

INDIAN CHIEF, PRINCE (92E-11, 32) (Fig. C, No. 126)

LOCATION: Lat. 49° 27′ Long. 126° 19′ (92E/8W)
ALBERNI M.D. Twenty-seven miles northwest of Tofino, on the west side of Stewardson Inlet, at approximately 1,700 feet elevation.

CLAIMS: VICTOR (Lot 571), PRINCE (Lot 572), PRINCE 2 to 4, 6, 7, 5, 8 (Lots 573 to 579), TINNICANUM (Lot 580), DEW DROP FR. (Lot 581), SCOTLET (Lot 582), LESCHI (Lot 583), VICTOR NO. 1 FR. (Lot 584), BEERSHALAM (Lot 698), MEPHISTOPHELES (Lot 711), BRUTUS NO. 2 FR. (Lot 712) Crown-granted claims.

OWNER: Estate of Hubert E. Dendoff (executors, Ernest F. Burnett and Gertrude G. Sproston).

OPERATOR: TEXADA MINES LTD., 407, 1111 West Georgia Street, Vancouver.

METALS: Copper, iron, gold, silver.

DESCRIPTION: Northeast-dipping basaltic and andesitic flows, lithic tuff, and limestone lenses of the Bonanza Subgroup have been altered to skarn near a quartz diorite contact. Skarn zones comprising garnet, epidote, and diopside contain masses and disseminations of magnetite with veins and disseminations of chalcopyrite and bornite.

WORK DONE: Surface geological mapping, 1 inch equals 2,400 feet covering the Indian Chief group; underground geological mapping, 1 inch equals 480 feet covering Scotlet and Prince 4; magnetometer survey, 12.3 line-miles covering Indian Chief group; geochemical soil survey, 673 samples, 12 line-miles covering Indian Chief group.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1899, pp. 791, 792; 1938, p. F68; 1956, p. 119; 1963, p. 101; *Geol. Surv., Canada*, Sum. Rept., 1918, Pt. B, p. 37; 1920, Pt. A, p. 20; Assessment Reports 462, 463.

HESQUIAT, BROWN JUG (92E-31, 16) (Fig. C, No. 10)

LOCATION: Lat. 49° 30′ Long. 126° 23′ (92E/8W, 9W)
ALBERNI M.D. Thirty-three miles northwest of Tofino, east side of Hesquiat Lake, between sea-level and 100 feet elevation.

CLAIMS: HESQUIAT 5 to 9, BROWN JUG 1 to 6, SATCHIE 2 to 7, HESTERVAN 1, 10 to 12, ESTEVAN 1 to 9, HES 1 to 5.

OWNER: Lindale Copper Mines Ltd.

OPERATOR: TEXADA MINES LTD., 407, 1111 West Georgia Street, Vancouver.

METALS: Lead, copper, zinc, iron.

DESCRIPTION: Sicker and Karmutsen volcanic rocks have been intruded by quartz diorite and diorite. Galena, sphalerite, and chalcopyrite associated with quartz, epidote, and sericite alteration occur in a shear zone. Chalcopyrite and magnetite mineralization occurs in quartz-epidote skarn at the intrusive contact.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering Brown Jug 1-6, Satchie 2-7, and Hestervan 2-5; ground magnetometer survey, 5 line-miles covering Satchie 2-7; geochemical soil and silt survey, 91 samples, 2 line-miles covering Satchie 2-7 and Brown Jug 5 and 6; trenching, 187 cubic feet on Satchie 3 and Hestervan 2 and 4; stripping, 2,400 square feet on Brown Jug 2.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 262.

ESP (92E-52, 53) (Fig. C, No. 9)

LOCATION: Lat. 49° 56′ Long. 126° 57′ (92E/15W)
ALBERNI M.D. One-half mile west of Espinosa Inlet and 5 miles north of Esperanza Inlet, at approximately 500 feet elevation.

CLAIMS: ESP 1 to 37.

OWNER: ESPINA COPPER DEVELOPMENTS LTD., 902, 850 West Hastings Street, Vancouver.

DESCRIPTION: The property is underlain by Bonanza andesitic volcanic rocks. Chalcopyrite, molybdenite, and pyrite are reported to occur in quartz-filled fractures.

WORK DONE: Geochemical soil survey, approximately 200 samples covering Esp 16-20; percussion drilling, 12 holes totalling 1,000 feet on Esp 3, 4, 5, and 6; claims surveyed; topography mapped.

REFERENCE: Assessment Report 4280.

ALBERNI 92F

ALBERNI (92F-79) (Fig. C, No. 11)

LOCATION: Lat. 49° 10′ Long. 124° 40′ (92F/2E)
ALBERNI M.D. Eight miles southeast of Alberni, on Mineral Creek, a tributary of China Creek, between 2,600 and 2,900 feet elevation.

CLAIMS: SAM 1 to 16.

OWNER: KEYWEST RESOURCES LTD., 818, 510 West Hastings Street, Vancouver.

METALS: Gold, lead, zinc.

DESCRIPTION: Gold occurs in quartz veins in a strong northerly trending shear zone in andesite. The veins contain minor amounts of pyrite, galena, and sphalerite.

WORK DONE: Surface geological mapping covering Sam 2, 4, 9, and 11; underground geological mapping, seven adits and two raises, totalling approximately 2,270 feet covering Sam 2 and 4; 300 feet of underground work on Sam 4 (cleaning out adits and sampling).

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1936, pp. F25-30; 1944, p. 148 (Vancouver Island Gold Mines Ltd.); Assessment Report 4915.

FOREMOST (92F-9 to 28) (Fig. C, No. 127)

LOCATION: Lat. 49° 15′ Long. 125° 35′ (92F/4E, 5E)
ALBERNI M.D. At the head of Tofino Inlet, on the east and west sides of Tofino Creek, between sea-level and 800 feet elevation.

CLAIMS: FOREMOST 5 to 8, FOREMOST COPPER 1 to 4, CLEAR CREEK 1 to 6, COPPER CREEK 1 to 4, VELVET 13 to 16, SALT CHUCK, SW 1 to 12.

OWNER: SUN-WEST MINERALS, LIMITED, 803, 1636 Haro Street, Vancouver.

METALS: Copper, molybdenum, nickel, gold, silver.

WORK DONE: Trenching, 4 feet by 5 feet by 90 feet on Clear Creek 4; stripping, 12 feet by 12 feet by 400 feet on Foremost Copper 2 and Clear Creek 2, 3, and 5.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 265.

LONE CONE, IRON CAP (92F-204, 158) (Fig. C, No. 12)

LOCATION: Lat. 49° 12′ Long. 125° 54′ (92F/4W)
ALBERNI M.D. The property lies from 2 to 6 miles north of Tofino and covers most of the western peninsula of Meares Island, between sea-level and 2,000 feet elevation.

CLAIMS: LONE CONE 1 to 39, 42 to 44, 52 to 59, 60 to 69, BL 1 to 24, 90 to 98, LITE 1 to 3, NICKEL, NICKEL 1 to 6, WIN 1 to 6.

OPERATOR: TEXADA MINES LTD., 407, 1111 West Georgia Street, Vancouver.

METALS: Copper, nickel, molybdenum.

DESCRIPTION: Sicker volcanic rocks and diorite gneiss have been intruded first by gabbro and later by Tertiary Catface intrusions. The intrusive complex is strongly faulted. Sulphide mineralization occurs in fractures. Chalcopyrite and molybdenite occur in quartz diorite, gabbro, and andesite. Chalcopyrite, pyrrhotite, and pentlandite mineralization has been found in gabbro.

WORK DONE: Surface diamond drilling, four holes totalling 987 feet on Lone Cone 1, 8, BL 2, 8, 1, 7, 4, 10, and Win 3; road constructed, 0.8 mile (access to drill site); trenching, 901 feet on Lone Cone 8, 1, BL 1, 7, 2, 8, 3, 9, 4, 10, and Win 3.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 265.

GOOD HOPE, CYPRUS (92F-154, 299) (Fig. C, No. 16)

LOCATION: Lat. 49° 16′ Long. 125° 56′ (92F/5W)
ALBERNI M.D. On the west side of Cypress Bay, 7.5 miles north of Tofino, between sea-level and 1,500 feet elevation.

CLAIMS: CYPRESS 1 to 10, 12 to 15, TOP 1 to 14.

OWNER: TEXADA MINES LTD., 407, 1111 West Georgia Street, Vancouver.

METAL: Copper.

DESCRIPTION: Sicker greenstone and argillite units have been cut by Catface intrusions. Chalcopyrite occurs in quartz veins and in greenstone near the intrusive contact.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical soil and silt survey, 150 samples, 3.5 line-miles; and linecutting covering Cypress 7-10 and Top 1 and 2.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1906, p. 188; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 266; Assessment Report 4688.

PROSPER (92F-53) (Fig. C, No. 15)

LOCATION: Lat. 49° 24′ Long. 125° 45′ (92F/5)
ALBERNI M.D. On Bedwell River, north of the mouth of Ursus River, between 100 and 1,200 feet elevation.

CLAIMS: PROSPER 1, BE 1 to 6, BW 1 to 6, BW Fraction, BUR 1 to 3, Mineral Lease M-60 (BROOKLYN, Lot 701).

OWNER: Golden Hinde Mines Ltd., Box 94, Tofino.

METALS: Copper, lead, iron, gold, silver.

DESCRIPTION: The Prosper property is underlain by Karmutsen volcanic rocks and limestone in contact with quartz diorite and diorite on the northwest part of the claims. Lenses of magnetite up to 10 feet wide, with chalcopyrite, occur as replacements in limestone and nearby volcanic rock. Similar lenses of magnetite and chalcopyrite occur in the volcanic rocks elsewhere on the claims. Mineralized quartz veins carrying gold values in some sections also occur on the property.

WORK DONE: Road construction, one-quarter mile on Prosper 1; trenching, 200 feet on Prosper 1 and Bur 1; underground work, 20 feet on Bur 1.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1947, p. 181; *B.C. Dept. of Mines,* Bull. 8, pp. 22-26.

BUCCANEER (92F-61) (Fig. C, No. 13)

LOCATION: Lat. 49° 25.5′ Long. 125° 41′ (92F/5E)
ALBERNI M.D. South side Bedwell River, 8.5 miles from mouth, between 1,700 and 2,000 feet elevation.

CLAIMS: MAY 1 to 8, JUNE 1 to 6, DEL 1 to 3.

OWNER: CRAIG MINING LTD., Box 72, Tofino.

METALS: Gold, silver, copper, lead, zinc.

DESCRIPTION: The claims are underlain by granodiorite cut by andesite dykes. Gold is associated with galena, sphalerite, chalcopyrite, minor pyrite, and ankerite (?) in quartz veins and fractures.

WORK DONE: Road constructed, 500 feet on May 5; trenching, approximately 2,000 cubic feet on May 5 and 6.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1946, p. 182; 1959, p. A45; *B.C. Dept. of Mines,* Bull. 13, pp. 47-61.

NOBLE (92F-57) (Fig. C, No. 14)

LOCATION: Lat. 49° 26′ Long. 125° 44′ (92F/5E)
ALBERNI M.D. At the confluence of Noble and Dry Creeks with Bedwell River, 5.5 miles north of Bedwell Sound, between 500 and 2,500 feet elevation.

CLAIMS: CUB 1 to 12, NUB 1 and 2.

OWNER: GOLDEN HINDE MINES LTD., Box 94, Tofino.

METALS: Copper, molybdenum, gold, silver.

DESCRIPTION: A contact between Island intrusions and Vancouver Group volcanic rocks passes through the property. Quartz veins up to 2 feet wide, some of which carry gold and silver mineralization, occur at various places on the property. Molybdenite occurs in fractures in intrusive rock and in a stockwork of quartz veins containing other sulphides. A major east-west-trending fault contains pyrrhotite as disseminations and as massive pods which contain erratic chalcopyrite.

WORK DONE: Geochemical soil and rock survey, 70 samples, 3.5 line-miles covering Cub 1-6; geochemical soil survey, 102 samples, 3.5 line-miles covering Cub 5-7 and Nub 1 and 2.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1947, p. 181; *B.C. Dept. of Mines,* Bull. 8, pp. 36-39; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 267 (CUB); Assessment Report 4354.

B (92F-356) (Fig. C, No. 21)

LOCATION: Lat. 49° 17' Long. 125° 06' (92F/6E)
ALBERNI M.D. At the middle of the north side of Sproat Lake, at approximately 900 feet elevation.
CLAIMS: B 1 to 6, 11 to 20.
OWNER: McLEOD COPPER LTD.; 13887 – 102nd Avenue, Surrey.
METAL: Copper.
WORK DONE: Surface diamond drilling, seven holes totalling 180 feet on B 13.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 268.

PAUL (92F-287) (Fig. C, No. 17)

LOCATION: Lat. 49° 37' Long. 124° 24' (92F/9W)
NANAIMO M.D. Approximately 5 miles southeast of Gillies Bay, west side of Texada Island, between sea-level and 1,000 feet elevation.
CLAIMS: PAUL 1 to 15, 19 to 34, 37, 38, 42, 44 to 46, 50 to 52.
OWNER: LAFARGE CANADA LTD., 1051 Main Street, Vancouver V6A 2V9.
METALS: Iron, copper.
WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering all claims; surface diamond drilling, six holes totalling 1,990 feet on Paul 8, 9, 10, 27, 29, and 31; linecutting covering eight claims.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 249; Assessment Report 4723.

TEXADA MINE (92F-106, 107, 257 to 259) (Fig. C, No. 132)

By W. C. Robinson

LOCATION: Lat. 49° 43' Long. 124° 34' (92F/10E)
NANAIMO M.D. Three and one-half miles south of Vananda, at Welcome Bay on the southwest coast of Texada Island.
CLAIMS: EASTGATE (Lot 53), GOODALL (Lot 234), LEROI, BOULDER NEST, JACK NORTH, YELLOW KID, LMC (Lots 264 to 268), and CAMERON (Lot 182) Crown-granted claims and approximately 55 located claims including LIME, IRON, and TML.

(92F/10E)

OWNER: TEXADA MINES LTD., Box 10, Gillies Bay.

METALS: Iron, copper (production shown in Table I).

DESCRIPTION: The Lake and Paxton orebodies are summarized as magnetite deposits with minor chalcopyrite and pyrrhotite replacing limestone, basalt, and minor amounts of quartz diorite. Mineralization occurs at the keels of compressed synclines which plunge gently westerly and are overturned northerly. The western orebodies, Prescott, Midway, and Yellow Kid, have similar mineralization but form an upward branching system which follows the contact between the Gillies stock and the volcanic rocks. The presence of irregular porphyry bodies and breccia appears to have influenced ore deposition.

WORK DONE: Trackless mining methods completed 2,010 feet of drifting. Other work included 122 feet of subdrifting and 788 feet of raising. The major portion of the ore was mined by longhole stoping. In the concentrator, magnetic separation and selective flotation methods were used to produce iron and copper concentrates.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1952, pp. 217-221; 1964, pp. 146-151; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, pp. 269, 270; *Geol. Surv., Canada,* Summ. Rept., 1924, Pt. A, pp. 106-144.

DECEMBER (92F-355) (Fig. C, No. 18)

LOCATION: Lat. 49° 44' Long. 124° 32' (92F/10E)
NANAIMO M.D. Approximately 2 miles south of Vananda and south of the road to Raven Bay, between 300 and 500 feet elevation.

CLAIMS: DECEMBER 6 to 8, DECEMBER C Fraction, APRIL 24, MAY 1 Fraction.

OWNER: LAFARGE CANADA LTD., 1051 Main Street, Vancouver V6A 2V9.

METALS: Copper, iron.

DESCRIPTION: The claims are underlain by limestone containing numerous skarn zones which have been cut by porphyritic dykes. Chalcopyrite and magnetite occur in veinlets and as minor disseminations.

WORK DONE: Surface diamond drilling, two holes totalling 855 feet on December 6 and 8.

X, D, F (Fig. C, No. 22)

LOCATION: Lat. 49° 31' Long. 125° 33' (92F/12E)
ALBERNI M.D. On Price Creek, from 2 to 6 miles south of the south end of Buttle Lake, at approximately 700 feet elevation.

CLAIMS: X 1 to 25, D 1 to 18, F 1 to 28.

OWNER: Cream Silver Mines Ltd.

OPERATOR: WESTERN MINES LIMITED, Box 8000, Campbell River.

DESCRIPTION: The claims are underlain by Sicker Group volcanic rocks consisting of rhyolite breccia, minor argillite, and dacitic lapilli tuff which are interbedded and dipping at a low angle to the southeast.

WORK DONE: Surface diamond drilling, one hole totalling 860 feet on X 1.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, pp. 267, 268.

LYNX MINE (92F-71) (Fig. C, No. 134)

By W. C. Robinson

LOCATION: Lat. 49° 34.5' Long. 125° 35.5' (92F/12E)
ALBERNI M.D. On the north slope of Myra Creek valley, 2.5 miles west-northwest of the south end of Buttle Lake.

CLAIMS: Mineral Lease M-19 (RED DEER, OTTER, Lots 1343, 1662), the Crown-granted claims PEARL, BETTY, ELWOOD, MINT, LYNX, COUGAR, BLUE GROUSE, BLUE JAY, RED SQUIRREL, GREY SQUIRREL, and BESSIE B (Lots 1340 to 1342, 1659, 1660, 1663 to 1667), and approximately 75 located claims including W, ELK, and MAR.

OWNER: WESTERN MINES LIMITED, 870, One Bentall Centre, Vancouver; mine office, Myra Creek.

METALS: Copper, zinc, lead, silver, gold (production shown in Table I).

DESCRIPTION: The Lynx deposit is, in summary, comprised of massive sulphide orebodies consisting mainly of chalcopyrite, galena, sphalerite, and pyrite in a gangue of quartz-sericite schist, calcite, and barite. Mineralization occurs in sheared andesite flows, volcanic breccias, and massive and thin-bedded tuffs.

WORK DONE: Drifting and crosscutting, 4,852 feet; raising, 2,712 feet; diamond drilling, 55,077 feet. Approximately three-quarters of the ore was obtained from underground and one-quarter from the open pit. Most of the underground ore was mined by cut-and-fill method, with mill tailings being used for backfill. A chlorine plant was installed to counteract residual cyanide in the concentrator tailings.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1964, pp. 157-166; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 271.

MYRA MINE (PARAMOUNT) (92F-72) (Fig. C, No. 133)

By W. C. Robinson

LOCATION: Lat. 49° 34' Long. 125° 35.5' (92F/12E)
ALBERNI M.D. On the south slope of Myra Creek valley, 1.5 miles west-northwest of the south end of Buttle Lake.

CLAIMS: BEAR PAW, BEAVER PAW, RIGHT PAW, LEFT PAW (Lots 1344 to 1347), SOUTH PAW, WEST PAW, NORTH PAW, EAST PAW (Lots 1668 to 1671), and approximately 60 located claims including W, ELK, and HAT.

OWNER: WESTERN MINES LIMITED, 870, One Bentall Centre, Vancouver.

METALS: Zinc, silver, copper, lead, gold (production shown in Table I).

DESCRIPTION: Massive, irregular, lens-shaped orebodies occur in altered, acidic, Sicker Group volcanic rocks.

WORK DONE: Drifting and crosscutting, 5,338 feet; raising, 2,277 feet; diamond drilling, 48,737 feet. Ore was trucked to the nearby concentrator at the Lynx mine.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 270, 271.

PRICE (92F-73) (Fig. C, No. 135)

By W. C. Robinson

LOCATION: Lat. 49° 33′ Long. 125° 34′ (92F/12E)
ALBERNI M.D. One-half mile southwest of the south end of Buttle Lake.

CLAIMS: BOULDER, RAVEN, BETTY, BARITE (Lots 1971 to 1974) Crown-granted claims and approximately 45 W and HAT located claims.

OWNER: WESTERN MINES LIMITED, 870, One Bentall Centre, Vancouver.

METALS: Copper, zinc, lead, silver, gold.

DESCRIPTION: Massive sulphide mineralization occurs in altered, siliceous, Sicker Group volcanic rocks.

WORK DONE: Work started on the driving of a tunnel from the west slope of Thelwood Creek valley to connect with No. 13 level of the Myra mine. At the end of the year the tunnel had advanced a distance of 2,312 feet from the portal, with 4,100 feet separating the face from a heading being driven from the Myra mine. Other work included 8,258 feet of diamond drilling from underground.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 251; 1972, p. 270.

MT. WASHINGTON COPPER (92F-116, 117) (Fig. C, No. 19)

LOCATION: Lat. 49° 46′ Long. 125° 18′ (92F/14, 11)
NANAIMO M.D. Fifteen miles west-northwest of Courtenay, on the north slope of Mount Washington, between 1,300 and 4,500 feet elevation.

CLAIMS: Four Crown-granted claims (Lots 91G to 94G) and the located claims DOMINEER, RONDO, KEN, GEM, PEARL, MUREX, ENA, CAM, MWC, MTW, etc., totalling approximately 260.

OWNERS: Mt. Washington Copper Co. Ltd. and Imperial Oil Limited.

OPERATOR: IMPERIAL OIL LIMITED, 500 Sixth Avenue SW., Calgary, Alta.

METALS: Copper, molybdenum, silver, gold.

WORK DONE: 1972 – linecutting, approximately 61 miles of grid; 1973 – surface geological mapping, 1 inch equals 400 feet covering MWC and MTW claims; IP survey, 7.5 line-miles covering MWC 134, 137-140, 174-178, 151, 152, 247, and 248; geochemical soil, silt, and water survey, approximately 5,000 samples, 150 line-miles; surface diamond drilling, seven holes totalling 2,812 feet on MWC 176, 175, and 527; 34.5 miles of line cut and surveyed.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 281; Assessment Reports 4471, 4505.

HI, DEE (92F-292, 291) (Fig. C, No. 23)

LOCATION: Lat. 49° 56′ Long. 124° 21′ (92F/16W)
VANCOUVER M.D. Between Haslam and Dodd Lakes, 8 miles east-northeast of Powell River, at approximately 1,200 feet elevation.

CLAIMS: HI 1 to 8, DEE 1 to 4, BECUS 1 to 4, MARS 1 to 8, WOF 1 to 6, BULL 1 to 12.

(92G/7E)

OWNERS: R. E. Mickle and M. V. Boylan.

OPERATOR: PHELPS DODGE CORPORATION OF CANADA, LIMITED, 404, 1112 West Pender Street, Vancouver V6E 2S1.

METALS: Minor copper and molybdenum.

DESCRIPTION: The claims are underlain by three phases of the Coast Range intrusive granodiorite and a central small quartz monzonite body showing chilled contacts. Known mineralization comprises a patchy zone of pyrite and chalcopyrite with molybdenite in slightly altered medium-grained biotite granodiorite near contacts with the quartz monzonite body.

WORK DONE: Surface diamond drilling, two holes totalling 600 feet on HI 6 and 2; road construction, one-half mile on HI 2, 6 and Mars 1, 2; stripping, 2 feet by 20 feet by 20 feet on HI 2 and 6.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 272, 273.

VANCOUVER 92G

PITT (Fig. C, No. 142)

LOCATION: Lat. 49° 22′ Long. 122° 34′ (92G/7E)
NEW WESTMINSTER M.D. On the east side of Pitt Lake, 1 mile north-northwest of Eunice Lake.

CLAIMS: PITT 1 to 6.

OWNER: A. Stephenson.

OPERATOR: V. ADAIR, c/o 723 Fifth Street, New Westminster.

DESCRIPTION: The area is underlain by granodiorite of the Coast Plutonic Complex.

WORK DONE: Two vertical packsack drill holes totalling 145 feet on Pitt 2.

REFERENCE: Assessment Report 4862.

SAM (Fig. C, No. 141)

LOCATION: Lat. 49° 26′ Long. 122° 34′ (92G/7E)
NEW WESTMINSTER M.D. On the west side of Pitt Lake, 1.5 miles northwest of Goose Island.

CLAIMS: SAM 1 to 16.

OWNER: KERRY MINING LTD., 2070, 777 Hornby Street, Vancouver.

DESCRIPTION: The claim area is underlain by rocks of the Coast Plutonic Complex, consisting mainly of quartz diorites and diorites. Some migmatite occurs in the northwestern part of the group. Pyrite is common as a fine dissemination and along some fractures. Copper was noted in minor amounts in an irregular shear just east of the property.

WORK DONE: Linecutting, 34 miles of grid; geochemical soil survey, 930 samples taken at 200-foot centres covering all claims.

REFERENCE: Assessment Report 4834.

RAT (Fig. C, No. 24)

LOCATION: Lat. 49° 23' Long. 122° 02' (92G/8E)
NEW WESTMINSTER M.D. One and one-half miles south of the south end of Chehalis Lake, between 800 and 2,500 feet elevation.

CLAIMS: RAT 1 to 14, 21 to 23, 25.

OWNER: LAURA MINES LTD., 403, 717 West Pender Street, Vancouver.

WORK DONE: Geochemical soil survey, 144 samples taken on 200 by 200-foot grid spacing.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 274; Assessment Report 4364.

BOR (92G-78) (Fig. C, No. 25)

LOCATION: Lat. 49° 40' Long. 122° 38' (92G/10E)
NEW WESTMINSTER M.D. On Corbold Creek at approximately 2,500 feet elevation.

CLAIMS: BOR 1 to 24.

OWNER: DUNBAR RESOURCES LTD., 200, 1405 Hunter Street, North Vancouver.

METALS: Copper, silver, gold.

DESCRIPTION: The property is underlain by metavolcanic rocks of the Corbold pendant which are in gradational contact with quartz diorite on the north and southeast, and both rocks are cut by northerly trending Tertiary dykes and shear zones. On Bor 1 and 2 a shear zone carries chalcopyrite and bornite.

WORK DONE: Surface geological mapping, 1 inch equals 800 feet; geochemical rock chip survey, 45 samples taken at irregular intervals along logging roads.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 274, 275; Assessment Reports 3906, 4513.

LORI (92G-72) (Fig. C, No. 140)

LOCATION: Lat. 49° 43' Long. 122° 56' (92G/10W)
VANCOUVER M.D. Ten miles east of Squamish, on Mamquam River, at approximately 3,000 feet elevation.

CLAIMS: LORI 1 to 20, ALCO 1 to 6, 11 to 16, 21 to 32, L 1 to 18, S 1 to 12, TULSA 13 to 16, SEE 1, 2, 9, 10, 15 to 17, BEN 1 to 4, J 1 to 8, BEE 1 to 24, LORI 1 Fraction.

OWNERS: Exeter Mines Limited, *et al.*

OPERATOR: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.

METALS: Copper, molybdenum.

(92G/11E)

DESCRIPTION: The area is underlain by rocks of the Coast Plutonic Complex including quartz diorite-diorite, pendants of andesite - granulite - migmatite, andesite porphyry, and aplite dyke swarms. Pyrite, chalcopyrite, and molybdenite occur along fractures and in quartz veinlets.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet; IP survey, 6.5 line-miles covering Lori 7-10, See 9, 10, Tulsa 15, 16, S 8, 10, Alco 1-4, 25, 27, 29-32; surface diamond drilling, three holes totalling 920 feet on Lori 9 and Alco 30.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 275; Assessment Reports 4916, 4917, 4918.

BRITANNIA MINE (92G-82) (Fig. C, No. 138)

By J. W. Robinson

LOCATION: Lat. 49° 36' Long. 123° 20' (92G/11E)
VANCOUVER M.D. The Britannia mine is at Britannia Beach, on the east side of Howe Sound, 40 miles by road north of Vancouver.

CLAIMS: The No. 10 mine area is located under the Crown-granted claims MINERAL CREEK (Lot 1894), DAISY (Lot 1899), NEWCASTLE (Lot 1936), and NANCY FR. (Lot 1997). The property consists of approximately 560 Crown-granted claims.

OWNER: ANACONDA CANADA LIMITED, Anaconda Britannia Mines Division, Britannia Beach.

METALS: Copper, zinc (production shown on Table 1).

DESCRIPTION: Copper and zinc sulphides occur as veins and beds in folded, metamorphosed dacitic to andesitic tuffs and tuffaceous sediment, that form a pendant in granodiorites of the Coast Plutonic Complex.

WORK DONE:

Development work in the Britannia mine consisted of 8,310 feet of drifting and 690 feet of sublevel drifting. The Alimak raise machine was used to drive 397 feet of raise. There was 2,585 feet of raises driven using conventional staging. Diamond drilling totalled 20,674 feet.

Preparatory development work for the No. 11 winze project continued during the year. This winze will give access to the ore below the present bottom of No. 10 shaft. A 7 by 14-foot winze was driven from 5500 level to 5980 level. The method of mining in the No. 10 shaft mine has been changed from a vertical-ring blasthole stoping system to a modified sublevel caving method during the past two years. The mining method changeover was almost completed by year end.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 193; 1970, pp. 233-246; 1971, pp. 255, 256; 1972, pp. 275, 276.

ANDY (Fig. C, No. 27)

LOCATION: Lat. 49° 41' Long. 123° 11' (92G/11E)
VANCOUVER M.D. On Howe Sound, opposite Squamish dock, at sea-level to 2,500 feet elevation.

CLAIMS: ANDY 11, 12, 14, 16, 18, 20, 22, 23.

(92G/11E)

OWNERS: R. B. Skinner and Conshell Resources Ltd.

OPERATOR: CONSHELL RESOURCES LTD., 126, 1111 Barclay Street, Vancouver.

WORK DONE: 1972 – an airborne combined magnetometer, electromagnetic, and radioactivity survey, covering 1,000 acres and comprising six runs of 15,000 feet, 500 feet apart.

REFERENCE: Assessment Report 4363.

CASH (Fig. C, No. 139)

LOCATION: Lat. 49° 42' Long. 123° 02' (92G/11E)
VANCOUVER M.D. Five miles east of Squamish, on Raffuse Creek.

CLAIMS: CASH 1 to 22.

OWNER: JAMES R. GLASS, 433, 355 Burrard Street, Vancouver.

DESCRIPTION: A roof pendant of Gambier volcanic rocks is intruded by granite dykes, and is in contact with the main granitic mass in the northwest. Two pyrite-bearing shear zones in the volcanic rocks strike subparallel to the main contact.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 4.2 line-miles covering Cash 1-8.

REFERENCE: Assessment Report 4885.

MAC (Fig. C, No. 26)

LOCATION: Lat. 49° 43' Long. 123° 03' (92G/11E)
VANCOUVER M.D. Four miles east of Squamish, on the south side of the Mamquam River, at approximately 2,000 feet elevation.

CLAIMS: MAC 1 to 8.

OWNER: NOMAD MINES LTD., 502, 470 Granville Street, Vancouver.

WORK DONE: Magnetometer survey, 6 line-miles of grid at 400-foot spacing.

REFERENCE: Assessment Report 4301.

MC (92G-81) (Fig. C, No. 137)

LOCATION: Lat. 49° 36' Long. 123° 53' (92G/12W)
VANCOUVER M.D. Six miles north of Halfmoon Bay, on Sechelt Peninsula, at approximately 2,600 feet elevation.

CLAIMS: MC 1 to 5, RUBI.

OWNER: R. C. Riepe.

OPERATOR: SQUAMISH STONE & SILICA CO. LTD., 8744 Joffre Avenue, Burnaby.

METALS: Copper, silver, iron.

DESCRIPTION: A northerly trending band of limestone and dolomite is engulfed by diorite. A shear zone in the sedimentary rocks on the MC 2 is mineralized with magnetite, pyrite, and chalcopyrite.

(92G/12W)

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical soil survey, 119 samples taken at 200 by 400-foot grid spacing; VLF EM and magnetometer survey, approximately 2 line-miles; airborne magnetometer, electromagnetic, and radiometric survey, 30 line-miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 465-467 (Peninsula Lime and Magnesia Quarry); Assessment Report 4803.

WAR (92G-76) (Fig. C, No. 28)

LOCATION: Lat. 49° 39' Long. 123° 54' (92G/12W)
VANCOUVER M.D. On Sechelt Peninsula, surrounding Lyon Lake, at approximately 3,000 feet elevation.

CLAIMS: WAR 7 to 47, 49 to 68, 71 to 74, REN 1 to 12, IT 1 to 6, WAR 3 and 4 Fractions.

OWNER: Branta Explorations Ltd.

OPERATOR: VANCO EXPLORATIONS LIMITED, Box 221, Commerce Court Postal Station, Toronto, Ont.

METALS: Molybdenum, copper.

DESCRIPTION: Roof pendants or large inclusions of the Jervis Group have been engulfed by granitic rocks of the Coast Plutonic Complex. The group consists of interlayered metavolcanic rocks, hornfels, and fine-grained amphibolite. Narrow feldspar porphyry dykes cut all other rocks. Both the pendant rocks and the granitic rocks are pyritized adjacent to their contacts. Minor disseminated chalcopyrite with traces of molybdenite occurs in a quartz stockwork in hornfels on the northeast shore of Lyon Lake.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering War 19, 21, 23, 28, 49, 71, War 3 and 4 Fractions, and IT 1-36; geochemical survey, 60 rock samples taken from road cuts and nearby exposures and 429 soil samples taken at 100 by 400-foot grid spacing covering War 19, 21, 23, 28, 49, 71, War 3 and 4 Fractions, and IT 1-6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 277; Assessment Report 4675.

SUNDOWN (92G-65) (Fig. C, No. 29)

LOCATION: Lat. 49° 39' Long. 123° 57' (92G/12W)
VANCOUVER M.D. On Sechelt Peninsula, 2 miles northeast of Kleindale, at approximately 500 feet elevation.

CLAIMS: SUNDOWN 3 to 8, 13, 14.

OWNER: JOHN B. L. ROBERTSON, 17th Floor, 1075 West Georgia Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Low-grade, disseminated copper-molybdenum mineralization has been reported to occur over a large area.

WORK DONE: Linecutting.

REFERENCE: Assessment Report 4278.

DAY (92G-77) (Fig. C, No. 30)

LOCATION: Lat. 49° 41' Long. 123° 58' (92G/12W)
VANCOUVER M.D. On the western shoulder of Mount Hallowell in the north central part of the Sechelt Peninsula, between 2,900 and 3,300 feet elevation.

CLAIMS: DAY 7 to 9, 8a, EDDY 1 to 8, M&H 1 to 10, JOHN 1 to 12, BEV 1 to 4.

OWNER: CONE MT. MINES LTD., 8167 Main Street, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: The property is underlain by quartz diorite and granodiorite of the Coast Plutonic Complex and by basalt, andesite, pyroclastics, minor limestone, chert, and argillite of the Jervis Group. The mineralization comprises lenses of chalcopyrite, pyrite, magnetite, and sphalerite that form vein-like bodies between chert and limestone.

WORK DONE: Magnetometer survey, 10 line-miles; electromagnetic survey, 10 line-miles; and geochemical soil survey, 260 samples, 10 line-miles covering John 1-5; trenching, 12 feet by 2 feet by 4 feet on Day 7; 12 feet by 6 feet by 5 feet on Eddy 5, and 40 feet by 5 feet by 4 feet on M&H 9.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 278.

RENO (Fig. C, No. 31)

LOCATION: Lat. 49° 42' Long. 123° 56' (92G/12W)
VANCOUVER M.D. On Mount Hallowell, Sechelt Peninsula, between 600 and 4,100 feet elevation.

CLAIMS: RENO 1 to 6, 11 to 18, RENO 1 and 2 Fractions.

OWNER: R. O. SARKY, 8167 Main Street, Vancouver.

WORK DONE: Reconnaissance geochemical soil survey, 113 samples taken at 200 by 200-foot grid spacing over 3.2 line-miles covering Reno 13-18.

REFERENCE: Assessment Report 4736.

COPPER (92G-40) (Fig. C, No. 32)

LOCATION: Lat. 49° 50' Long. 123° 50' (92G/13W)
VANCOUVER M.D. On the east side of Jervis Inlet, near the mouth of Treat Creek, between sea-level and 3,000 feet elevation.

CLAIMS: T 1 to 14, 19, 22 to 25, 26 to 33, 51 to 57, 59, 61, 91 to 102.

OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: Fine-grained andesite with lenses of argillites and cherts which underlie the claims have been cut by a 500-foot wide northwest-trending quartz diorite dyke. The rocks were mapped as Jervis Group volcanic rocks. Mineralization occurs as veinlets and massive sulphide replacement of pyrite, pyrrhotite, sphalerite, and minor chalcopyrite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; magnetometer survey, 6 line-miles covering T 1, 2, and 27; geochemical soil survey, 370 samples, 6 line-miles covering T 1, 2, and 27; surface diamond drilling, four holes totalling 1,862 feet on T 3, 5, and 7.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 278, 279.

PEMBERTON 92J

TEEN (Fig. C, No. 121)

LOCATION: Lat. 50° 12' Long. 122° 57' (92J/2W)
VANCOUVER M.D. Two miles north of Green Lake, at the head of Sixteen Mile Creek.

CLAIMS: TEEN 1 to 11.

OWNER: Albert H. Manifold.

OPERATOR: BOW RIVER RESOURCES LTD., 333, 885 Dunsmuir Street, Vancouver V6C 1N5.

WORK DONE: Linecutting, 5.5 miles of grid; geochemical soil survey, 275 samples taken at 100 by 200-foot grid spacing covering Teen 1-6.

REFERENCE: Assessment Report 4764.

BLUE JACK (92J-51) (Fig. C, No. 43)

LOCATION: Lat. 50° 04' Long. 123° 08' (92J/3E)
VANCOUVER M.D. From 1 mile to 5 miles north of Brandywine Falls, between 1,900 and 3,600 feet elevation.

CLAIMS: VAN 1 to 43, 63 to 79, 81 to 83, 89, 90, SUNNY CAVE 1 to 28, MAT 1 to 8, SNOW 1 to 24, PETER 1, STAR 1 and 2, BRU, MILL, ASH, ELM, SPINE, MINE, THYNE, LU, JO, VERN 8.

OWNER: VAN SILVER EXPLORATIONS LTD., 118, 815 West Hastings Street, Vancouver V6C 1B4.

METALS: Lead, zinc, silver, gold, copper.

DESCRIPTION: Roof pendant rocks which include interbedded limestone, fine-grained, limy greenstone, diorite, dacite, quartz diorite, and minor rhyolite have been intruded by granodiorite and quartz diorite of Jurassic age. Aphanitic felsite dykes intrude the above rock types. Mineralization includes goid, tetrahedrite, galena, sphalerite, pyrite, and chalcopyrite.

WORK DONE: Surface diamond drilling, two holes totalling 600 feet on Sunny Cave 9.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1936, pp. F56-F58; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 306, 307 (VAN, SUNNY CAVE).

CI, JE (92J-101, 102) (Fig. C, No. 42)

LOCATION: Lat. 50° 05' Long. 123° 02' (92J/3E)
VANCOUVER M.D. Three miles southwest of Alta Lake village, on Cheakamus River, at approximately 2,000 feet elevation.

CLAIMS: CI 1 to 6, JE 1 to 6.

OWNER: HOKO EXPLORATION LTD., 540, 645 Fort Street, Victoria.

METAL: Copper.

DESCRIPTION: Chalcopyrite and malachite have been noted disseminated in the country rocks, and chalcopyrite occurs in a quartz vein exposed in several pits along a road.

WORK DONE: Linecutting, 10.6 miles of grid; geochemical soil survey, 407 samples taken at 100 by 400-foot grid spacing.

REFERENCE: Assessment Report 4666.

SIL (Fig. C, No. 38)

LOCATION: Lat. 50° 05' Long. 123° 05' (92J/3E)
VANCOUVER M.D. Four miles north-northeast of Brandywine Falls, on the north side of Cheakamus River, between 2,000 and 4,800 feet elevation.

CLAIMS: SIL 1 to 58.

OWNERS: SPROAT SILVER MINES LTD. and HIGHHAWK MINES LIMITED, 333, 885 Dunsmuir Street, Vancouver.

WORK DONE: Linecutting, 46 lines of grid; geochemical soil survey, 1,215 samples taken at 200 by 400-foot grid spacing covering Sil 1-30.

REFERENCE: Assessment Report 4547.

PINTO (Fig. C, No. 37)

LOCATION: Lat. 50° 06' Long. 123° 06' (92J/3E)
VANCOUVER M.D. Five miles north of Brandywine Falls, on the east side of Callaghan Creek, between 2,200 and 5,400 feet elevation.

CLAIMS: PINTO 1 to 14.

OWNER: Kendal Leahy.

OPERATOR: NORTHAIR MINES LTD., 333, 885 Dunsmuir Street, Vancouver.

WORK DONE: Linecutting, 17 miles of grid established; geochemical soil survey, 459 samples taken on 200 by 400-foot grid spacing covering all claims.

REFERENCE: Assessment Report 4494.

KAY (Fig. C, No. 39)

LOCATION: Lat. 50° 06' Long. 123° 07' (92J/3E)
VANCOUVER M.D. Five miles north of Brandywine Falls, astride Callaghan Creek, between 2,100 and 3,000 feet elevation.

CLAIMS: KAY 1 to 30, KAY 31 and 32 Fractions.

OWNER: Consolidated Standard Mines Ltd.

OPERATOR: HART RIVER MINES LTD., 333, 885 Dunsmuir Street, Vancouver.

WORK DONE: Linecutting, 15.5 miles of grid; geochemical soil survey, 325 samples taken at 200 by 1,000-foot grid spacing covering Kay 1-30.

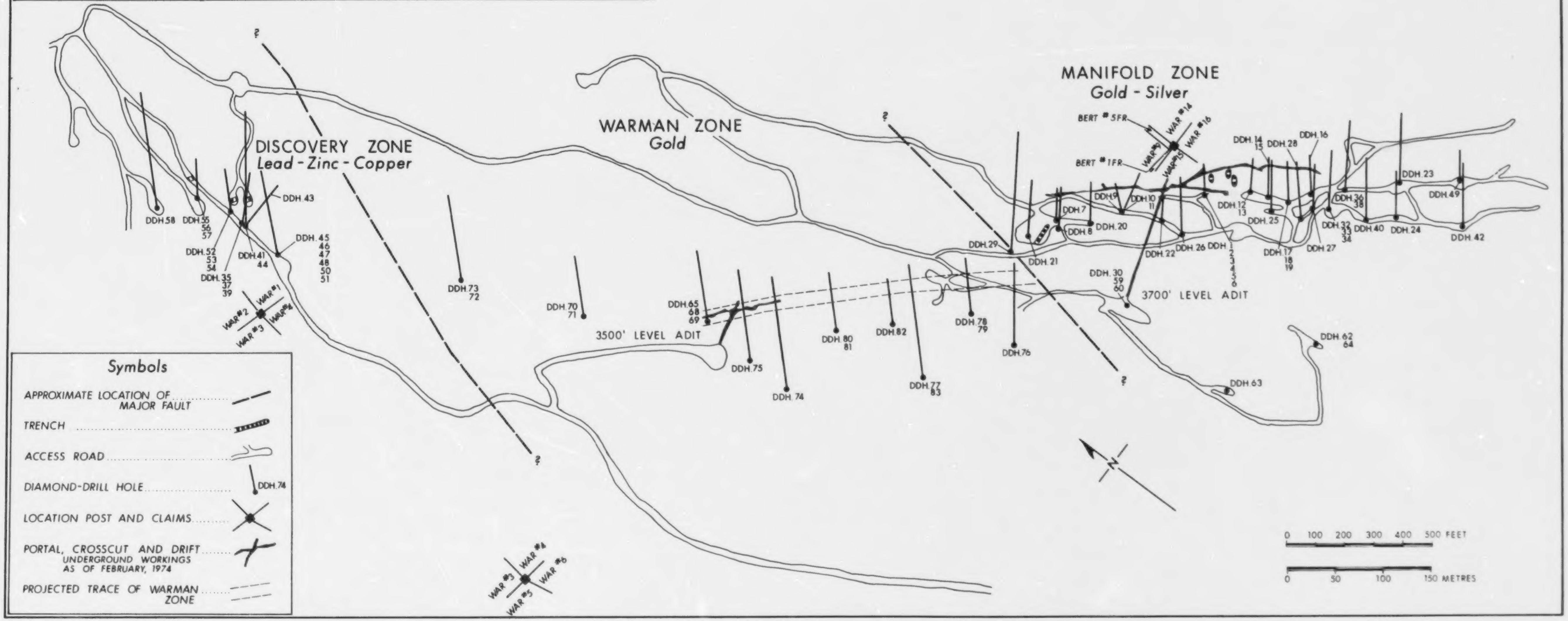
REFERENCE: Assessment Report 4602.

NORTHAIR MINES LTD.
WARMAN VEIN:
LOCATION OF ZONES, DRILL HOLES, AND UNDERGROUND WORKINGS

BRANDYWINE FALLS AREA

BASED ON COMPANY MAPS

Figure 19


DISCOVERY ZONE
Lead - Zinc - Copper
WARMAN ZONE
Gold
MANIFOLD ZONE
Gold - Silver
3500' LEVEL ADIT
3700' LEVEL ADIT
DDH.58
DDH.55 56 57
DDH.52 53 54
DDH.35 37 39
DDH.41 44
DDH.43
DDH.45 46 47 48 50 51
DDH.73 72
DDH.70 71
DDH.65 68 69
DDH.75
DDH.74
DDH.80 81
DDH.82
DDH.77 83
DDH.78 79
DDH.76
DDH.29
DDH.21
DDH.7
DDH.8
DDH.9
DDH.10 11
DDH.20
DDH.22
DDH.26
DDH 1 2 3 4 5 6
DDH.30 59 60
DDH.12 13
DDH.14 15
DDH.28
DDH.16
DDH.25
DDH.17 18 19
DDH.27
DDH.32 33 34
DDH.36 38
DDH.40
DDH.24
DDH.23
DDH.49
DDH.42
DDH.62 64
DDH.63
BERT #5FR
BERT #1FR
WAR #14
WAR #16
WAR #9
WAR #15
WAR #8
WAR #7
WAR #1
WAR #2
WAR #3
WAR #4
WAR #5
WAR #6
?
N
0 100 200 300 400 500 FEET
0 50 100 150 METRES
Symbols
APPROXIMATE LOCATION OF MAJOR FAULT
TRENCH
ACCESS ROAD
DIAMOND-DRILL HOLE
DDH.74
LOCATION POST AND CLAIMS
PORTAL, CROSSCUT AND DRIFT UNDERGROUND WORKINGS AS OF FEBRUARY, 1974
PROJECTED TRACE OF WARMAN ZONE

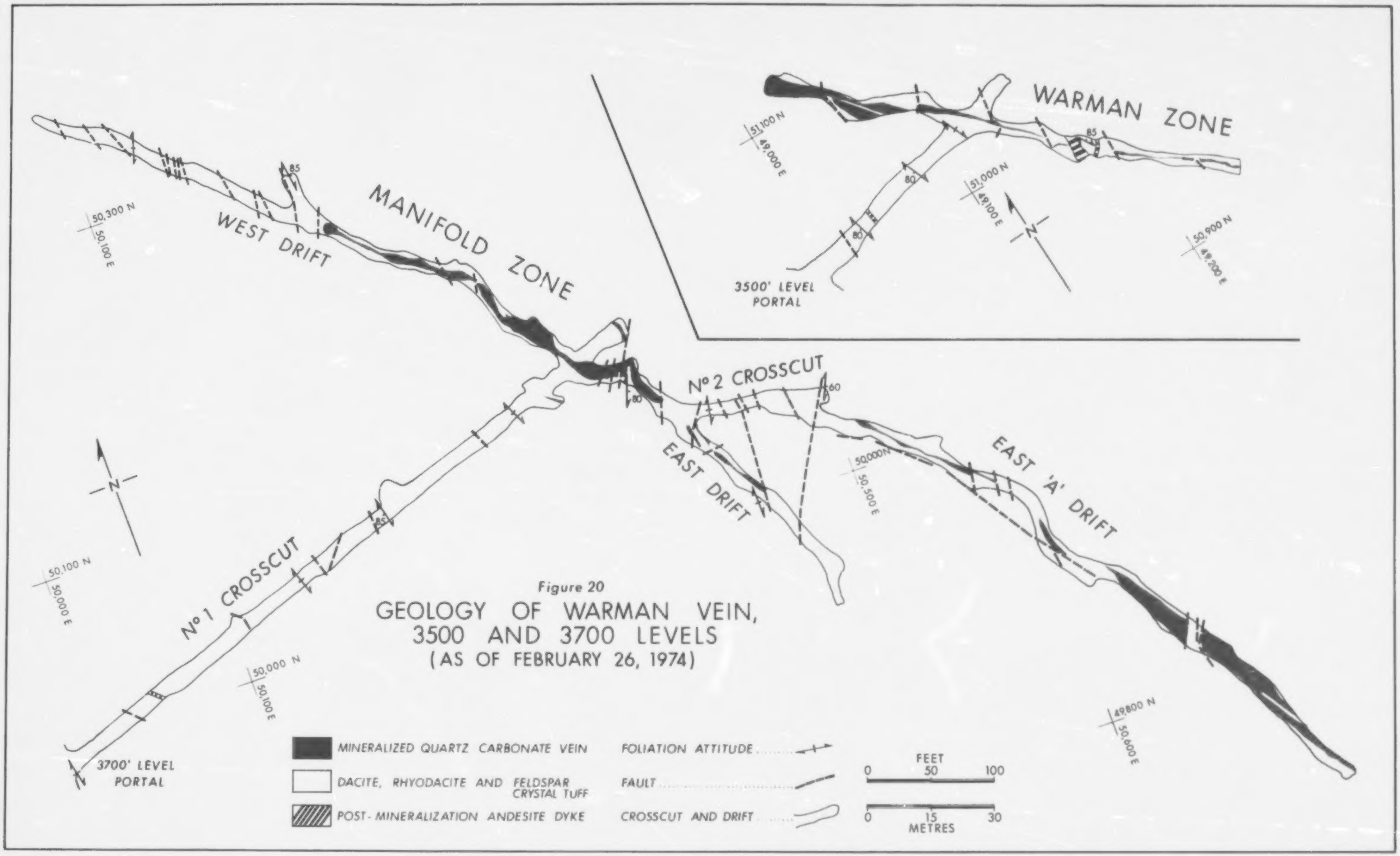

WARMAN ZONE
MANIFOLD ZONE
WEST DRIFT
EAST DRIFT
EAST 'A' DRIFT
N° 2 CROSSCUT
N° 1 CROSSCUT
3500' LEVEL PORTAL
3700' LEVEL PORTAL
N
85
80
60
51,100 N
49,000 E
51,000 N
49,100 E
50,900 N
49,200 E
50,300 N
50,100 E
50,100 N
50,000 E
50,000 N
50,100 E
50,000 N
50,500 E
49,800 N
50,600 E
MINERALIZED QUARTZ CARBONATE VEIN
DACITE, RHYODACITE AND FELDSPAR CRYSTAL TUFF
POST-MINERALIZATION ANDESITE DYKE
FOLIATION ATTITUDE
FAULT
CROSSCUT AND DRIFT
FEET
0
50
100
0
15
30
METRES

Figure 20

GEOLOGY OF WARMAN VEIN,
3500 AND 3700 LEVELS
(AS OF FEBRUARY 26, 1974)

LORI (BOW RIVER RESOURCES) (Fig. C, No. 34)

LOCATION: Lat. 50° 07′ Long. 123° 03′ (92J/3E)
VANCOUVER M.D. Six miles north-northeast of Brandywine Falls, on the southeast flank of Mount Sproatt, between 3,100 and 5,900 feet elevation.

CLAIMS: LORI 1 to 12, 25 to 36.

OWNER: BOW RIVER RESOURCES LTD., 333, 885 Dunsmuir Street, Vancouver.

METAL: Copper.

DESCRIPTION: The area is underlain by Mesozoic acidic volcanic rocks which occur as a roof pendant within the Coast Plutonic Complex.

WORK DONE: 1972 – linecutting, 24.6 miles of grid; 1972 – geochemical soil survey, 650 samples taken at 200 by 400-foot grid spacing covering all claims.

REFERENCE: Assessment Report 4533.

LORI (NORTHAIR, GEO-DYNE) (Fig. C, No. 35)

LOCATION: Lat. 50° 08′ Long. 123° 03′ (92J/3E)
VANCOUVER M.D. Eight miles north-northeast of Brandywine Falls, on the northwest flank of Mount Sproatt, between 4,500 and 5,900 feet elevation.

CLAIMS: LORI 13 to 24, 37 to 48.

OWNER: Northair Mines Ltd.

OPERATOR: GEO-DYNE RESOURCES LTD., 1155, Two Bentall Centre, Vancouver and NORTHAIR MINES LTD., 333, 885 Dunsmuir Street, Vancouver.

WORK DONE: Linecutting, 18.5 miles of grid; geochemical soil survey, 475 samples taken at 200 by 400-foot grid spacing covering all claims.

REFERENCE: Assessment Report 4534.

WARMAN (92J-89) (Fig. C, No. 36)

By D. E. Pearson

LOCATION: Lat. 50° 08′ Long. 123° 06′ (92J/3E)
VANCOUVER M.D. Seven miles north of Brandywine Falls, on the east side of Callaghan Creek, at approximately 3,500 feet elevation.

CLAIMS: WARMAN 1 to 18, DOG 1 to 50, 52 to 55, 63 to 66, CAT 1 to 10, 19 to 32, 35 to 38, CAT 1 to 5 Fractions, BERT 1, 4, 5 to 9 Fractions.

OWNER: NORTHAIR MINES LTD., 333, 885 Dunsmuir Street, Vancouver.

METALS: Gold, silver, zinc, lead, copper.

DESCRIPTION:

An amateur prospector, Dr. M. P. Warshawski, and a geologist, Mr. A. H. Manifold, located the first claims on the Warman property in September 1970, following encouraging results from prospecting and chemical analysis of stream waters that enter Callaghan Creek from the east side. Since early September 1972, when Northair Mines Ltd., optioned the property, a considerable amount of work has outlined three zones of economic interest. The following description is based on two one-day visits to the property. On the first visit in September 1973, the 3700 level crosscut and drift were mapped, while during the second visit in February 1974, the crosscut and first advances in the 3500 level drift were mapped.

GENERAL GEOLOGY: Three separate sections of what may be the same vein have been defined by the company. These are called the Discovery zone, the Warman vein, and the Manifold or Main zone (Fig. 19). To date, underground exploration has proceeded on the Manifold zone and Warman vein (Fig. 20).

The vein is composed of gold and silver-bearing quartz-carbonate rock with visible galena, sphalerite, chalcopyrite, and pyrite. It is a vertical or steeply dipping tabular body that is repeatedly offset by northerly trending faults with left lateral separation. The vein is emplaced in a series of foliated volcanic rocks including dacite, rhyodacite, and feldspar-crystal tuff, that form a roof pendant in granodioritic rocks of the Coast Plutonic Complex.

MINERALOGY OF THE VEIN

Manifold Zone: The Manifold zone was located by diamond drilling in the fall of 1972, having been previously outlined as an area of anomalously high silver by soil geochemical surveys. Assays from this drilling programme which were released by the company in October 1972 are shown in Table 1.

TABLE 1: ASSAYS FROM MANIFOLD ZONE

Hole No.	Dip degrees	Interval feet	Width feet	Gold oz. per ton	Silver oz. per ton	Lead per cent	Zinc per cent
1	– 0	79.8 – 82.5	2.7	.2	23.5	----	----
		sludge 79 – 85	6.0	.22	29.7	----	----
2	–32	95.5 – 98.9	3.4	.15	23.0	----	----
7	–33	85 – 88	3.0	.8	3.4	----	----
		131.2 – 131.5	0.3	.48	1.8	----	----
10	–43	123 – 130	7.0	.34	8.03	1.5	6.5
11	–45	89.3 – 94.3	5.0	.58	11.9	----	----
12	– 8	91.5 – 94	2.5	.13	11.5	----	----
13	–40	80.6 – 81.5	.9	.16	17.8	----	----
14	– 8	77 – 78	1.0	.13	26.4	----	----
		83 – 83.7	.7	.31	71.9	----	----
		101.5 – 113.3	11.8	.19	17.5	----	----
15	–43	91.1 – 92	.9	.04	3.9	----	----
		111 – 112	1.0	.09	5.5	----	----
		126 – 135	9.0	.11	11.0	----	----
17	– 8	115 – 123	8.0	.085	12.65	----	----
18	–43	145 – 163.3	18.3	.15	24.5	----	----
19	–55	182.7 – 199.1	17.4	.19	17.0	----	----

By September 1973, underground exploration had proceeded on the west and east drifts of the 3700 level as shown on Figure 20. Mineralization underground consisted of disseminated galena - sphalerite - pyrite in a quartz - carbonate - chlorite gangue. No free gold was seen.

The company has estimated that this zone contains 305 tons per vertical foot averaging: gold, 0.36 ounce per ton; silver, 19.4 ounces per ton; and combined lead and zinc (diluted), 2 per cent, over average mining widths of 5.7 feet. The vein crops out at 3,900 feet, and has been intersected 150 feet beneath the 3700 level, giving a known depth of at least 350 feet.

Discovery Zone: As the name implies, this was the area where mineralized outcrops were first seen. However, the area was not tested by diamond drill until the summer of 1973.

The following table (Table 2) indicates the results obtained.

TABLE 2: ASSAYS FROM DISCOVERY ZONE

Hole No.	Dip degrees	Interval feet	Width feet	Gold oz. per ton	Silver oz. per ton	Copper per cent	Lead per cent	Zinc per cent
35	– 5	130.0 – 140.5	5.5	.025	1.50	.89	5.03	17.75
37	–30	71.6 – 77.6	6.0	.02	1.5	.43	4.13	5.13
		142.2 – 148	5.8	.43	1.5	.40	.84	3.2
39	–42	76.8 – 87.2	10.4	.015	1.4	.80	6.35	7.00
41	–30	130 – 139	9.0	.03	1.5	.80	3.9	12.0
43	– 0	130.2 – 140.7	10.5	.615	.62	.17	.71	2.37
		130.2 – 147	16.8	.39	.80	.37	.52	4.28
44	–50	131.2 – 156.7	25.5	.58	2.77	.93	12.31	14.72
45	– 0	227 – 260.2	33.2	.082	1.4	.56	9.65	8.46

Warman Vein: The Warman vein was located by diamond drilling in October 1973 following geochemical and geophysical surveys over the area between the Discovery and Manifold zones. Assay results from this drilling programme were released by the company in January 1974 (Table 3).

TABLE 3: ASSAYS FROM WARMAN VEIN

Hole No.	Dip degrees	Interval feet	Intersection feet	Gold oz. per ton
65	–15	107.0 – 116.6	9.6	.31
68	–53	147.0 – 149.0	2.0	.07
69	–70	258.0 – 267.1	9.1	.47
74	– 4	358.3 – 364.3	6.0	.37
75	–15	358.0 – 362.3	4.3	.52
76	–15	254.0 – 262.0	8.0	.24
77	–13	361.8 – 380.0	18.2	.77
79	–25	126.0 – 168.5	42.5	1.74
80	–46.5	244.3 – 264.0	19.3	.88
81	–15	215.5 – 223.0	7.5	.08
82	–55	222.5 – 229.5	7.0	1.10

On the second visit to the minesite in late February 1974, the vein had been intersected by a crosscut on the 3500 level, and drifting east toward the high-grade gold section had commenced.

Mineralization from the Warman vein differs somewhat from that of the Manifold zone. Massive galena and sphalerite are common and galena may be banded with the quartz-carbonate veining. The proportion of gangue to sulphides seems to be less. While polished sections of the mineralization have not yet been studied, in hand specimens, free gold was not recognized. Finally, gold-silver ratios from the two zones are quite distinct: Warman vein, approximately 1:1; Manifold zone, 1:19.

On the basis of the reported diamond-drill-hole data, the company has estimated that the Warman vein contains 964 tons per vertical foot averaging 1.05 ounce per ton gold over average mining widths of 12.4 feet, for a strike length of about 1,200 feet. Diamond-drill holes 70, 71, 72, and 73 did not intersect the Warman vein, and it is likely that the separation between this zone and the Discovery zone is caused by a fault with right lateral separation. The vein is known to a depth below the surface of 400 feet.

WORK DONE: Crosscutting, 450 feet; drifting, 1,150 feet; underground geological mapping, 1 inch equals 20 feet; surface diamond drilling, 53 holes totalling 17,299 feet; underground diamond drilling, 31 holes totalling 3,570 feet; magnetometer, EM, and geochemical survey, 11.5 line-miles and 295 soil samples taken at 200 by 1,000-foot grid spacing.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 306; 1972, pp. 280, 281; Assessment Reports 3273, 4641.

CD (Fig. C, No. 40)

LOCATION: Lat. 53° 09' Long. 123° 04' (92J/3E)
VANCOUVER M.D. At the headwaters of Twentyone Mile Creek, 8 miles north-northeast of Brandywine Falls, between 2,500 and 6,000 feet elevation.

CLAIMS: CD 1 to 28.

OWNER: CUTLASS EXPLORATION LTD., 1840, 777 Hornby Street, Vancouver.

WORK DONE: Linecutting, 30 miles of grid; geochemical soil survey, 711 samples taken at 200 by 400-foot grid spacing covering all claims.

REFERENCE: Assessment Report 4612.

FASS (Fig. C, No. 41)

LOCATION: Lat. 50° 10' Long. 123° 05' (92J/3E)
VANCOUVER M.D. Nine miles north of Brandywine Falls, 2 miles southwest of Rainbow Mountain, between 3,000 and 6,000 feet elevation.

CLAIMS: FASS 1 to 48, 51 to 98, 201 to 221.

OPERATOR: CALTOR SYNDICATE, 1011, 2200 Yonge Street, Toronto, Ont.

(92J/6E)

WORK DONE: Geochemical survey, approximately 200 silt and soil samples taken in reconnaissance along creeks and gullies and 215 soil samples taken on a 100 by 400-foot grid spacing covering approximately 46 Fass claims.

REFERENCE: Assessment Report 4652.

SKI, GM (92J-103) (Fig. C, No. 44)

LOCATION: Lat. 50° 25′ Long. 123° 10′ (92J/6E)
LILLOOET M.D. Eighteen miles west-northwest of Pemberton, 3 miles south of Ryan River, between 3,700 and 7,100 feet elevation.

CLAIMS: SKI 1 to 14, GM 1 to 8, KP 1 to 10, 21 to 32.

OWNER: A.L.J. MacDonald.

OPERATOR: OREQUEST EXPLORATION SYNDICATE, 711, 850 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Hornblende granodiorite and diorite have been cut by a northwest-trending zone of shearing, in which the rocks are progressively chloritized, then sericitized and silicified toward a quartz-sericite core. A narrow zone adjacent to the core contains as much as 3 per cent disseminated pyrite. Outside the pyrite zone widely separated fractures and narrow quartz veins carry blebs of chalcopyrite and less molybdenite. Small bodies of hornblende microdiorite and dykes of basalt appear to have been intruded after the alteration.

WORK DONE: Surface geological mapping, 1 inch equals 350 feet covering approximately 1.5 square miles (GM 1-8 and Ski 1-14).

REFERENCE: Assessment Report 4664.

COPPER QUEEN (92J-48, 54, 55) (Fig. C, No. 45)

LOCATION: Lat. 50° 24′ Long. 122° 47′ (92J/7W)
LILLOOET M.D. On Owl Creek, 6 miles north of Pemberton, between 2,500 and 3,700 feet elevation.

CLAIMS: OWL 1 to 8, OC 1 to 6, 43 to 48, KB 1 to 14, OL 1 to 22, OLN 1 to 24, OLS 1 to 30, BO 1 to 12.

OWNER: PINE LAKE MINING CO. LTD., 616, 402 West Pender Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Upper Triassic volcanic rocks and intercalated sedimentary rocks underlie the valley of Owl Creek, and are flanked by younger granite and granodiorite on the northeast. A tongue of granite extends into the bank from the west, and several stocks of diorite or quartz diorite intrude it. Several directions of shearing are evident or inferred, the dominant one paralleling the axis of Owl Creek valley. The diorite stocks are altered along shear zones and contain considerable pyrite and subordinate chalcopyrite and molybdenite at shear zone intersections.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering approximately 8 square miles (most of the claims).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 282; *Geol. Surv., Canada*, Summ. Rept., 1924, Pt. A, p. 76; Assessment Reports 599, 2106, 3625, 4623.

SILVER QUEEN, PATRICK (92J-79, 80) (Fig. C, No. 145)

LOCATION: Lat. 50° 21′ Long. 122° 03′ (92J/8E)
KAMLOOPS M.D. Thirty-three miles east of Pemberton, on the west fork of Cottonwood Creek, at approximately 5,000 feet elevation.

CLAIMS: SILVER QUEEN 1 to 5 (Lots 2168 to 2172), PATRICK 1 to 7 (Lots 7221 to 7227), REGINA and REGINA NO. 2 (Lots 2173 and 2174), SUNRISE (Lot 7228), FALL FR. (Lot 7331), LONG FR. (Lot 7230), LEG FR. (Lot 7229), KAR 1 to 26, GC 1 to 4, MOON 1 to 15, SUN 1 to 9, PEAK 1 to 4.

OWNERS: Rampart Mines Ltd. and K. E. Wickstrom.

OPERATOR: RAMPART MINES LTD., 618, 510 West Hastings Street, Vancouver.

METALS: Silver, lead, zinc, gold.

DESCRIPTION: The Silver Queen claims are underlain by a stock of hornblende diorite that is intruded by aplite and is extensively silicified and altered to a quartz feldspar porphyry. Galena and sphalerite occur disseminated and as fracture fillings in the quartz-sericite siliceous intrusive. Gold and silver occur in the rock associated with the alteration.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Regina and Fall Fraction; geochemical survey, 110 samples, 2.5 line-miles covering Silver Queen 2 and 3, Regina, Regina No. 2, Fall Fraction, and Sunrise; linecutting on Silver Queen 3 and Regina; trenching, 9,000 cubic yards on Regina, Silver Queen 1 and 3, Sunrise, Fall Fraction, Kar 1, and Patrick 5.

REFERENCE: *Minister of Mines, B.C.*, Ann. Rept., 1957, p. 23.

CHIP, PEM (Fig. C, No. 46)

LOCATION: Lat. 50° 36′ Long. 123° 02′ (92J/11E)
LILLOOET M.D. On the east side of Donelly Creek, 4 miles south of Hurley River, at approximately 5,000 feet elevation.

CLAIMS: CHIP 1 to 18, PEM 1 to 14, 26 to 30.

OWNER: John Grant.

OPERATOR: CALTOR SYNDICATE, 1011, 2200 Yonge Street, Toronto, Ont.

DESCRIPTION: The property is underlain by acidic to intermediate volcanic rocks, which to the southwest have been intruded by a granodiorite pluton.

WORK DONE: Geochemical survey, approximately 400 samples covering Pem 1-14, 26-30 and Chip 1-18; linecutting.

REFERENCE: Assessment Report 4778.

FALL (92J-94) (Fig. C, No. 47)

LOCATION: Lat. 50° 40' Long. 123° 29' (92J/11W)
LILLOOET M.D. One mile south of the junction of Salal Creek and Lillooet River, between 2,100 and 4,500 feet elevation.

CLAIMS: FALL 1 to 42, VENT 1 to 30.

OWNER: SILVER STANDARD MINES LIMITED, 808, 602 West Hastings Street, Vancouver V6B 1P2.

METAL: Molybdenum.

WORK DONE: Trenching, 1,050 feet on Fall 4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 308, 309; 1972, p. 281.

BRALORNE MINE (92J-1 to 4, 7, 9, 17, 18) (Fig. C, No. 143) By E. Sadar

LOCATION: Lat. 50° 46' Long. 122° 48' (92J/15W)
KAMLOOPS M.D. Five miles south of Gold Bridge, on Cadwallader Creek.

CLAIMS: The company holds 133 Crown-granted mineral claims. The main workings underlie IDA MAY (Lot 457), BLACKBIRD (Lot 1176), HIRAM (Lot 581), LORNE (Lot 588), GOLDEN KING (Lot 587), LITTLE JOE (Lot 539), PIONEER (Lot 456), and COUNTLESS (Lot 1177). The Crown shaft is on the Blackbird claim.

OWNER: BRALORNE RESOURCES LIMITED, 1005, Two Bentall Centre, Vancouver V7X 1H9.

METALS: Gold (minor silver).

WORK DONE: The mine, which ceased operations in September 1971, was reopened and the No. 8 level or adit level was rehabilitated. Hoisting facilities of the Crown shaft were repaired, and ore and waste passes were pumped out, to allow a diamond drilling exploration programme of untested zones of the 51 and 77 veins near the Crown shaft area. Twenty-two diamond-drill holes, totalling 8,804 feet, were completed on the Hiram and Blackbird claims. Adequate surface facilities were renovated to facilitate the underground exploration programme.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 308.

RELIANCE (92J-33) (Fig. C, No. 49)

LOCATION: Lat. 50° 53' Long. 122° 46.5' (92J/15W)
LILLOOET M.D. Three and one-half miles by gravel road east of Gold Bridge, between 2,000 and 5,000 feet elevation.

CLAIMS: Mineral Lease M-65 comprising OMEN 1 to 8, NEMO 1 to 8, EROS 1, 2, 4, 5, OMEN FR., NEMO FR., THIN FR., BLUFF FR., NOVA FR., EROS FR. (Lots 7660 to 7663, 7463 to 7465, 7496, 7651 to 7658, 7497, 7498, 7500 to 7506, 7499 respectively).

OWNER: Guy B. Allen.

OPERATOR: T.V.I. MINING LTD., 501, 315 Eighth Avenue SW., Calgary, Alta.

METALS: Antimony, gold.

DESCRIPTION: Massive greenstones of the Ferguson Group have been cut by north-northeasterly striking shear zones. Mineralization consists of stibnite and gold in quartz and calcite-filled shear zones.
WORK DONE: EM survey, 4 line-miles covering Mineral Lease M-65.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 312 (OMEN, NEMO); *Geol. Surv., Canada,* Mem. 130, pp. 73, 74.

GRAY ROCK (92J-104) (Fig. C, No. 48)

LOCATION: Lat. 50° 48′ Long. 122° 42′ (92J/15E)
LILLOOET M.D. Seven miles southeast of Gold Bridge, at the headwaters of Truax Creek, between 6,800 and 7,300 feet elevation.
CLAIMS: ROBIN 1 to 6, ROY 1 to 4, ANT 1 to 4, 10, 11.
OWNER: GRAY ROCK MINING COMPANY LIMITED, c/o C. H. Mitchell, 1200 West Pender Street, Vancouver.
METALS: Lead, zinc, silver, antimony.
DESCRIPTION: Lead, zinc, antimony sulphides, and precious metals occur in quartz veins which transect metasedimentary rocks.
WORK DONE: Surface and underground workings mapped at a scale of 1 inch equals 100 feet.
REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1936, pp. F43-F47; 1949, pp. 107-112; 1954, pp. 104-107; Assessment Reports 305, 837.

BUTE INLET 92K

SUNSET, FS (92K-50, 123) (Fig. C, No. 120)

LOCATION: Lat. 50° 10′ Long. 125° 24′ (92K/3W)
NANAIMO M.D. Eleven miles north-northwest of Campbell River, 1 mile west of Brown Bay.
CLAIMS: FS 1 to 16.
OWNER: FOUR SEASONS MANUFACTURING LTD., 1102, 1177 West Hastings Street, Vancouver.
METAL: Copper.
DESCRIPTION: The claims are underlain by a succession of nearly flat-lying Karmutsen Group lava flows. Sparse bornite occurs along the base of a flow of pillow lava and pillow breccia, both in the lava and in a small limestone channel filling. At the old Sunset showing several parallel bornite-bearing quartz veins strike 330 to 345 degrees through the flows.
WORK DONE: Geochemical soil survey, 98 samples taken at 200-foot intervals; VLF EM survey, 2.6 line-miles covering FS 2-8 and 11-14.
REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1899, p. 807; 1901, p. 1114; Assessment Reports 4179, 4823.

COPPER ROAD (92K-60) (Fig. C, No. 50)

LOCATION: Lat. 50° 12′ Long. 125° 18′ (92K/3W)
NANAIMO M.D. One and one-half miles northeast of Deepwater Bay, Quadra Island, at approximately 1,400 feet elevation.

CLAIMS: COPPER ROAD 1, 2, 5 to 8, 39, 40, 43, 103, 104, RIB 1, 2, 15, 20 to 22, RIB 16 Fraction, VIN 1 Fraction.

OWNERS: Mr. and Mrs. E. Adams and Mrs. J. Adams.

OPERATOR: UNIVEX MINING CORP. LTD., 215, 744 West Hastings Street, Vancouver V6C 1A5.

METALS: Copper, minor silver.

DESCRIPTION: The claims are underlain by massive and amygdaloidal Karmutsen Group basaltic flows which, in places where they are sheared and brecciated, contain quartz and carbonate. Mineralization occurs in an east-west-trending, steep southerly dipping shear zone which ranges from 17 to 40 feet and is said to extend for about 2,000 feet. Mineralization consists of bornite and chalcopyrite with minor chalcocite, tetrahedrite, and native copper reported.

WORK DONE: Surface diamond drilling, two holes totalling 537 feet on Copper Road 1; topography mapped from airphotos at 1 inch equals 400 feet.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 280.

BELL (92K-105) (Fig. C, No. 52)

LOCATION: Lat. 50° 02′ Long. 125° 33′ (92K/4E)
NANAIMO M.D. On the north shore of the west end of Lower Campbell Lake, 13 miles west of Campbell River.

CLAIMS: BELL 1 to 6, 8.

OWNERS: J. SIROLA and J. L. WILLIAMS, c/o 3282 West 27th Avenue, Vancouver.

METALS: Copper, iron.

WORK DONE: Linecutting.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 285; Assessment Report 4358.

TOWER (Fig. C, No. 136)

LOCATION: Lat. 50° 16′ Long. 125° 47′ (92K/5W)
NANAIMO M.D. Eleven miles southeast of Sayward, between Highway 19 and the headwaters of Big Tree Creek, between 1,000 and 2,000 feet elevation.

CLAIMS: TOWER 1 to 15.

OWNER: WESTERN STANDARD SILVER MINES LTD., Box 462, Kelowna.

METAL: Copper.

DESCRIPTION: The claims are underlain mainly by massive and amygdaloidal Karmutsen Group basalts with minor interbedded tuff which has been intruded by granodiorite-quartz diorite on the east side of the claim block. The volcanic rocks have been altered, fractured, and locally mineralized by chalcopyrite and minor bornite within 3,000 feet of the intrusive contact.

WORK DONE: Geochemical soil survey, 65 samples covering Tower 1-15.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 286.

LOUGHBOROUGH (92K-48) (Fig. C, No. 51)

LOCATION: Lat. 50° 32' Long. 125° 32' (92K/12E)
VANCOUVER M.D. Thirty-five miles north of Campbell River.

CLAIMS: MAYO 1 to 4, 9 to 12.

OWNER: Tatsuya Takeda.

OPERATOR: TRIAKO ENTERPRISES INTERNATIONAL LTD., 433, 355 Burrard Street, Vancouver.

METALS: Gold, silver.

DESCRIPTION: The claims are underlain by granitic rocks of the Coast Plutonic Complex. A number of quartz veins 1 to 2 inches wide occur which commonly contain pyrite. During 1935-1939, 135 tons of hand-sorted gold ore was shipped from Mayo 11.

WORK DONE: Reconnaissance geological mapping; EM VLF survey; geochemical soil survey; linecutting, 8.1 miles of grid established.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1936, pp. F17-F20; 1961, p. 90; Assessment Reports 350, 4492.

BIG ANDY (92K-122) (Fig. C, No. 119)

LOCATION: Lat. 50° 47' Long. 124° 49' (92K/15W)
VANCOUVER M.D. On the east side of Bute Inlet, four miles east-southeast of Purcell Point, at approximately 4,000 feet elevation.

CLAIMS: BIG ANDY 1 to 10.

OWNERS: Leslie R. Harrison and Raymond Hrkac.

OPERATOR: HECLA OPERATING COMPANY, 2009, 1177 West Hastings Street, Vancouver V6E 2K3.

METALS: Copper, zinc, minor precious metals and lead.

DESCRIPTION: The claims are underlain by andesitic volcanic rocks and siliceous sedimentary rocks containing minor limestone. These rocks are in close proximity to granitic rocks of the Coast Plutonic Complex and have been metamorphosed to phyllite, quartzite, amphibolite, schist, and marble. Chalcopyrite and pyrrhotite mineralization with minor sphalerite is massive in appearance in places and occurs in sheared and silicified argillite and phyllite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Big Andy 1-10; topography mapped from airphotos at 1 inch equals 500 feet; trenching, 50 feet on Big Andy 3 and 6.

ALERT BAY 92L

WOSS LAKE (92L-64, 65, 66) (Fig. C, No. 54)

LOCATION: Lat. 50° 07′ Long. 126° 33′ (92L/2E)
NANAIMO M.D. Five miles south of the north end of Woss Lake and 2 miles east of the lake, between 2,200 and 3,200 feet elevation.

CLAIMS: COPPER DUKE I to III, WOSTHOPE 1 and 2.

OWNERS: F. LORING, A. CHISHOLM, A.B.L. WHITTLES, and GEORGE KINNEARD, c/o 8, 94 Commercial Street, Nanaimo.

METALS: Copper, iron, silver, gold.

DESCRIPTION: Karmutsen basalt has been intruded by northwesterly trending dykes of porphyry and cut by northeasterly striking quartz veins. Some veins carry chalcopyrite and pyrite. Two vein-like bodies 20 to 30 feet wide, containing specularite, magnetite, and chalcopyrite, lie approximately parallel to the veins.

WORK DONE: Reconnaissance geological mapping; magnetometer and VLF EM survey, 3.6 line-miles along irregular lines during 1972 and 1973.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1965, p. 233 (WOSS); Assessment Reports 663, 4568.

ZEB (Fig. C, No. 53)

LOCATION: Lat. 50° 00′ Long. 126° 49′ (92L/2W)
ALBERNI M.D. One mile northeast of Zeballos, at the headwaters of Hidden Valley Creek, at approximately 2,000 feet elevation.

CLAIMS: ZEB 1 to 6.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Gold, copper.

DESCRIPTION: The Zeb claims cover the northwest extension of a bed of limestone which is partly mineralized by gold-bearing pyrrhotite and a small amount of chalcopyrite.

WORK DONE: Geochemical soil survey, 57 samples, 1.07 line-miles covering Zeb 1-6.

REFERENCE: Assessment Report 4819.

ATLUCK (92L-260) (Fig. C, No. 58)

LOCATION: Lat. 50° 12′ Long. 126° 59′ (92L/2W)
NANAIMO M.D. At the western end of Atluck Lake.

CLAIMS: ATLUCK 1 to 8.

OWNERS: Stampede International Resources Ltd. and Northwest Ventures Ltd.

OPERATOR: GROUNDSTAR RESOURCES LIMITED, 185 Davenport Road, Toronto, Ont.

METAL: Copper.

DESCRIPTION: The southwestern part of the property is underlain by Quatsino limestone, and the northeastern part by Karmutsen basalt. Chalcopyrite occurs as small grains and fracture coatings in basalt in a quarry on Atluck 3 and 4.

WORK DONE: Surface geological mapping, 1 inch equals 300 feet; magnetometer survey, 11 line-miles covering all claims.

REFERENCE: Assessment Report 4818.

TINY (92L-256) (Fig. C, No. 56)

LOCATION: Lat. 50° 03′ Long. 127° 21′ (92L/3W)
ALBERNI M.D. Two miles northeast of Kyuquot, at the north end of McKay Cove.

CLAIMS: TINY 1 to 8.

OWNERS: PECHINEY DEVELOPMENT LIMITED and THE DOWA MINING CO., LTD., 701, 744 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: The property is underlain by massive and pyroclastic andesites of the Bonanza Subgroup. Chalcopyrite, bornite, chalcocite, and azurite occur in a shear zone.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Tiny 1 to 8; magnetometer survey, 7 line-miles; geochemical soil survey, 150 samples taken at 200 by 500-foot grid spacing covering Tiny 1-8; trenching, 1,200 cubic feet on Tiny 6.

REFERENCE: Assessment Report 4600.

MORRIS, MONTEITH (92L-72, 117) (Fig. C, No. 55)

LOCATION: Lat. 50° 07′ Long. 127° 18′ (92L/3W)
ALBERNI M.D. Eight miles northeast of Kyuquot, on the west side of Kashutl Inlet.

CLAIMS: KASHU 1 to 4, 11 to 48, 50, 55 to 80, 83 to 94.

OWNER: KENNCO EXPLORATIONS, (WESTERN) LIMITED, 730, 505 Burrard Street, Vancouver.

METALS: Pyrophyllite, trace copper.

DESCRIPTION: Bonanza flows, tuffs, and mudstones dip moderately south to southwest and locally have been pyritized and progressively altered to quartz-sericite, quartz-pyrophyllite, and quartz-natroalunite rocks.

WORK DONE: Reconnaissance geological mapping; geochemical rock-chip survey, 23 samples taken at varying intervals along shorelines covering Kashu 12-16, 18, 36, 39, 45, 47, 56, 65, 70, 72, and 89 during 1972.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1920, p. 198; *Geol. Surv., Canada,* Summ. Rept., 1913, p. 109; Assessment Report 4539.

BATTLE (92L-261) (Fig. C, No. 59)

LOCATION: Lat. 50° 14′ Long. 127° 35′ (92L/4E)
ALBERNI M.D. Two and one-half miles north-northeast of the head of Nasparti Inlet, at approximately 2,000 feet elevation.

CLAIMS: BATTLE 1 to 6.

OWNER: KENNCO EXPLORATIONS, (WESTERN) LIMITED, 730, 505 Burrard Street, Vancouver.

(92L/5E)

METAL: Trace copper.

DESCRIPTION: The area is underlain by andesite flows and interbedded chert, tuff, and amphibole-rich rocks which are randomly cut by narrow andesite and diorite dykes. A small diorite stock intrudes the volcanic rocks on Battle 2 claim. Pyrite, pyrrhotite, and chalcopyrite occur in the bedded volcanic and sedimentary rocks. Pyrite is commonly disseminated throughout and occurs in amounts up to 15 per cent. Pyrrhotite is sporadic and chalcopyrite is low, averaging 0.05 per cent copper.

WORK DONE: Surface geological mapping, 1 inch equals 600 feet; geochemical survey, 20 silt samples and 30 rock samples covering all claims.

PABLO (92L-257, 258, 259) (Fig. C, No. 57)

LOCATION: Lat. 50° 16' Long. 127° 44' (92L/5E)
NANAIMO M.D. Twenty-two miles northwest of Kyuquot, on the west side of Klaskish Basin.

CLAIMS: PABLO 18 to 35, 40 to 43, PABLO 36 to 39 Fractions.

OWNERS: PECHINEY DEVELOPMENT LIMITED and THE DOWA MINING CO., LTD., 701, 744 West Hastings Street, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: Karmutsen andesite and basalt are irregularly intruded by diorite, which grades locally to gabbro or anorthosite. Chalcopyrite, pyrrhotite, magnetite, and sphalerite are disseminated in andesite adjacent to diorite on Pablo 22. Pyrite and chalcopyrite occur in two zones of brecciated, silicified diorite on Pablo 24.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering approximately 2 square miles; geochemical soil survey, 392 samples taken at 200 by 500-foot grid spacing; magnetometer survey, 16 line-miles covering Pablo 20-35, 40-43, and Pablo 36-39 Fractions; trenching, 10,440 cubic feet.

REFERENCE: Assessment Report 4598.

SINKER, MEXICAN (RUF) (92L-144, 237) (Fig. C, No. 60)

LOCATION: Lat. 50° 18' Long. 127° 44' (92L/5E)
NANAIMO M.D. On the north side of the east end of Klaskino Inlet, at approximately 800 feet elevation.

CLAIMS: KLASKINO 1 to 42.

OWNER: R. J. Bilquist.

OPERATOR: BRITISH NEWFOUNDLAND EXPLORATION LIMITED, 704, 602 West Hastings Street, Vancouver.

METALS: Copper, molybdenum, cobalt.

DESCRIPTION: The property is underlain by Karmutsen, Quatsino, and Bonanza volcanic and Parson Bay sedimentary rocks which have been disrupted by block faulting. The Parson Bay rocks have been intruded by microdiorite and felsite dykes, and contain chalcopyrite and pyrrhotite as disseminations and fracture fillings.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; linecutting, 20 miles of grid; geochemical soil survey, 550 samples taken at 100 by 200-foot grid spacing covering Klaskino 1-42 during 1972 and 1973.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1903, p. 195; 1967, p. 70; Assessment Reports 961, 2407, 4730.

R (92L-205) (Fig. C, No. 61)

LOCATION: Lat. 50° 28' Long. 127° 36' (92L/5E)
NANAIMO M.D. Eight miles northwest of Port Alice, on the north slope of Comstock Mountain, at approximately 2,500 feet elevation.

CLAIMS: R 1 to 14, 17 to 30, 33 to 48, SU 1 to 6, 11 to 16, RSU 1 to 8.

OWNER: CELTIC MINERALS LTD., 107, 325 Howe Street, Vancouver.

METAL: Copper.

WORK DONE: Geological and geochemical surveys during 1972.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 289; Assessment Reports 3023, 3164, 3652, 4355.

BOB, HAB (92L-134, 164, 254, 255) (Fig. C, No. 62)

LOCATION: Lat. 50° 19' Long. 126° 45' (92L/7)
NANAIMO M.D. Seventeen miles south of Beaver Cove, on the highway at the south end of Bonanza Lake, between 1,600 and 2,500 feet elevation.

CLAIMS: BOB 1 to 13, 15 to 24, 26 to 31, 33, HAB 1 to 48.

OWNERS: R. McIver and Imperial Oil Limited.

OPERATOR: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

METALS: Copper, iron.

DESCRIPTION: Karmutsen basalts have been cut by a granodiorite pluton. Faulted, northwest-trending inliers of intervolcanic (?) limestone and skarn are found both in the intrusive and the volcanic rocks. Chalcopyrite, pyrite, magnetite, and minor pyrrhotite are associated with garnet epidote skarn.

WORK DONE: 1972 – geological, geophysical, and geochemical surveys covering Hab 1-38; 1973 – surface geological mapping, 1 inch equals 400 feet and 1 inch equals 50 feet; EM survey, 32 line-miles; magnetometer survey, 32 line-miles; geochemical soil and silt survey, 684 samples, approximately 32 line-miles; linecutting, 32 miles of grid covering Bob 1-33 and Hab 39-48.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1968, p. 100; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 274; 1972, p. 290; Assessment Reports 4350, 4351, 4353.

B, C, E (Fig. C, No. 63)

LOCATION: Lat. 50° 22′ Long. 126° 54′ (92L/7W)
NANAIMO M.D. On the east side of Nimpkish Lake at the mouth of Storey Creek.

CLAIMS: B 1 to 9, C 1, 3, 5, 7, E 1 to 4, 11 to 18.

OWNER: ACHERON MINES LTD., 201, 714 West Hastings Street, Vancouver.

METALS: Iron, zinc.

DESCRIPTION: Minor magnetite and sphalerite are associated with skarn zones in Quatsino limestone.

WORK DONE: Geochemical survey, 161 samples collected over a 200 by 200-foot grid spacing covering B 1-3, E 2, 4, 11-14; magnetometer survey, 9.5 line-miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 319; Assessment Report 4352.

MAGNET (92L-97) (Fig. C, No. 64)

LOCATION: Lat. 50° 25′ Long. 126° 57′ (92L/7W)
NANAIMO M.D. On the east side of Nimpkish Lake, 1 mile north of Noomas Creek.

CLAIMS: EXCEL, EXCEL 1 to 20, EXCELSIOR.

OPERATORS: FIRST NATIONAL URANIUM MINES LIMITED and GROUNDSTAR RESOURCES LIMITED, 185 Davenport Road, Toronto, Ont.

METALS: Iron, copper.

DESCRIPTION: Scattered skarn zones occur at Quatsino - Karmutsen - Island intrusion contacts. Mineralization consists of magnetite, pyrite, pyrrhotite, and chalcopyrite in garnet and epidote gangue.

REFERENCES: *Geol. Surv., Canada*, Summ. Rept., 1931, Pt. A, pp. 32, 33; Assessment Reports 93, 94, 4447, 4789.

BOYES (92L-185 to 188) (Fig. C, No. 122)

LOCATION: Lat. 50° 17′ Long. 126° 03′ (92L/8E)
NANAIMO M.D. Two miles south-southwest of Keta Lake, on the west side of Adam River, between 1,500 and 2,000 feet elevation.

CLAIMS: BOYES, DENNIS, KEVIN, GEO, BRUCE, totalling approximately 103.

OWNER: Western Standard Silver Mines Ltd.

OPERATOR: CONOCO SILVER MINES LTD., 3, 4647 Kingsway, Burnaby V5H 2B4.

METAL: Copper.

DESCRIPTION: The Dennis 25 to 28 claims of the Boyes property are underlain by gently to moderately northeasterly dipping massive and amygdaloidal Karmutsen Group basalts containing an interlava limestone bed approximately 50 feet thick. The principal mineralization is found in basalt flows beneath the interlava limestone. Chalcopyrite and bornite occur mainly in amygdules and as disseminations in the basalt matrix. Chalcopyrite occurs in fractures in scattered areas.

(92L/8E)

WORK DONE: Surface geological mapping covering all claims; rotary drilling, five holes totalling 2,536 feet on Dennis 28.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 291.

I (92L-252) (Fig. C, No. 123)

LOCATION: Lat. 50° 30' Long. 126° 06' (92L/8E)
VANCOUVER M.D. Eight miles north-northwest of Kelsey Bay, 1 mile west of Port Neville, at approximately 600 feet elevation.

CLAIMS: I 1 and 2, PORT 3 to 22, STAN 1 to 3, H&B 1 to 6.

OWNER: STANLEY WESTON (VALDEZ SYNDICATE), 1850 Southwest Marine Drive, Vancouver V6P 6B2.

METAL: Copper.

WORK DONE: IP survey, 950 line-feet covering I1 and 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 292; Assessment Report 4895.

LORENA (92L-262) (Fig. C, No. 65)

LOCATION: Lat. 50° 31' Long. 126° 55' (92L/10W)
NANAIMO M.D. Eight miles southeast of Port McNeill, 1.5 miles west of Beaver Cove, at approximately 2,000 feet elevation.

CLAIMS: LORENA 1 to 14, GRIZZLY 1 to 3, BEAVER 1 to 6, CLARKE 1 to 16, RAVEN 1 to 5.

OWNER: LORENA MINES LTD., 18th Floor, 505 Burrard Street, Vancouver.

METAL: Copper.

DESCRIPTION: The property is underlain by Karmutsen basalt and Quatsino limestone intruded by granodiorite. Chalcopyrite occurs in basalt as disseminations, fracture fillings, and in amygdules.

WORK DONE: Geochemical survey, 60 soil samples taken in four selected areas and 44 rock samples taken at 50-foot centres on Lorena 1.

REFERENCE: Assessment Report 4596.

ISLAND COPPER MINE (92L-158) (Fig. C, No. 66)

By W. C. Robinson

LOCATION: Lat. 50° 36.0' Long. 127° 28.3' (92L/11W)
NANAIMO M.D. Five miles east of Coal Harbour, on the north side of Rupert Inlet, between sea-level and 300 feet elevation.

CLAIMS: BAY, COVE, JIM, INLET, COIR, RUPERT, and ART, totalling 175.

OWNER: UTAH MINES LTD., 412, 510 West Hastings Street, Vancouver; mine address, Box 370 Port Hardy.

METALS: Copper, molybdenum (production shown in Table I).

DESCRIPTION: The deposit has been described as a porphyry copper deposit in which most of the mineralization occurs within brecciated rocks of the lower part of the Bonanza Subgroup. Copper and molybdenum mineralization occurs as disseminatons and in veinlets in siliceous and hydrothermally altered tuff and tuff breccia of andesite and basalt composition.

WORK DONE:

In addition to the 12 million tons of ore that was trucked directly to the nearby concentrator, 28,839,000 tons of waste material was removed from the pit during the year. A portion of the waste material was placed upon land adjacent to the pit and the remainder was deposited into Rupert Inlet. Mining at this operation was done with benches placed at 40-foot intervals. At the year-end the lowest elevation in the pit was 80 feet below sea level. Equipment in the pit consisted of twenty-three 120-ton Unit Rig M-120 trucks, five 15-cubic-yard P&H electric shovels, one 6½-cubic-yard Marion electric shovel, two 60-R Bucyrus-Erie rotary drills, and one 45-R Bucyrus-Erie rotary drill. During the year construction was completed on the addition of three ball mills in the concentrator. Tailings from the concentrator was discharged directly into Rupert Inlet although an emergency tailings impoundment, capable of storing a quantity of tailings that could be produced in a six-month period, was available.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 267-269; 1972, pp. 293-303; Cargill, D. G., Dissertation on Geology of Island Copper Deposit, *U.B.C.*, (in preparation).

HPH, DORLON (92L-69, 74, 241 to 245) (Fig. C, No. 69)

LOCATION: Lat. 50° 42′ Long. 127° 50′ (92L/12W)
NANAIMO M.D. On the south side of Nahwitti Lake, between 800 and 1,300 feet elevation.

CLAIMS: HPH, SUN, TAXI, NORMAN, SILVA, LPS, etc., totalling approximately 80.

OWNERS: Giant Explorations Limited, Meade Hepler, and Ida Pugh.

OPERATOR: GIANT EXPLORATIONS LIMITED, Box 10010, Pacific Centre, Vancouver.

METALS: Copper, lead, zinc, silver, iron.

DESCRIPTION: The property is underlain by sedimentary rocks of the Parson Bay and Quatsino Formations and volcanic rocks of the Karmutsen Formation and Bonanza Subgroup. These rocks are intruded by Island intrusions. Magnetite, chalcopyrite, sphalerite, and silver-bearing galena occur in skarn and in siliceous replacements of limestone.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet; ground magnetometer survey, 3.5 line-miles; and geochemical soil survey, 82 samples, 5.3 line-miles covering Taxi and Sun claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 306; Assessment Report 4472.

MO (92L-181) (Fig. C, No. 68)

LOCATION: Lat. 50° 43′ Long. 127° 55′ (92L/12W)
NANAIMO M.D. Two miles west of Nahwitti Lake at approximately 2,000 feet elevation.

CLAIMS: MO 1 to 4, MON 1 to 4, TI 2, 4, 6, 8, 29 to 34, 48 to 53, BUD 1.

OWNER: ACHERON MINES LTD., 107, 325 Howe Street, Vancouver.

(92L/12W)

METALS: Copper, zinc, minor lead.

DESCRIPTION: Chalcopyrite and sphalerite, with minor galena, occur in skarn developed in Quatsino limestone near a quartz diorite intrusion.

WORK DONE: 1972 – surface geological mapping of the western half of the property; magnetometer survey covering Mo 1-4 and Mon 2 and 3; detailed geochemical survey, 628 samples collected for analysis covering Mo 1-4, Mon 4, and Tl 29.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 262; Assessment Report 4251.

PUP (Fig. C, No. 124)

LOCATION: Lat. 50° 44' Long. 128° 00' (92L/12W; 102I/9E)
NANAIMO M.D. Five miles north of Holberg, at approximately 1,000 feet elevation.

CLAIMS: PUP 1 to 146.

OWNER: J. P. Stevenson.

OPERATOR: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims; IP survey, 8.75 line-miles (along roads).

REFERENCE: Assessment Report 4810.

EXPO (92L-88, 131, 240) (Fig. C, No. 67)

LOCATION: Lat. 50° 39' Long. 127° 50' (92L/12)
NANAIMO M.D. Fifteen to 21 miles west and southwest of Port Hardy, Vancouver Island, between 1,000 and 1,500 feet elevation.

CLAIMS: Approximately 500 EXPO, 60 HEP, 12 DONI Fractions, 9 EXPO Fractions, 2 WAN Fractions.

OWNER: UTAH MINES LTD., 412, 510 West Hastings Street, Vancouver V6B 1L9.

METALS: Copper, molybdenum.

DESCRIPTION: The Expo claims are underlain mainly by volcanic rocks of the Bonanza Subgroup. Some Karmutsen Group volcanic rocks and Quatsino and Parson Bay sedimentary rocks also are present. These rocks are intruded by plutons of varied size and degree of contamination and differentiation. The Bonanza rocks are cut by several silicified, brecciated zones which are possibly related to volcanic centres. Pyrite is abundant and widespread; chalcopyrite, though very minor, occurs in scattered zones.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 304; Assessment Report 4754.

SILTA (DUD) (92L-178) (Fig. C, No. 70)

LOCATION: Lat. 50° 59′ Long. 127° 13′ (92L/14E)
VANCOUVER M.D. Twenty-two miles northeast of Port Hardy, on the north side of Nenahlmai Lagoon, at approximately 350 feet elevation.

CLAIMS: QC 1 to 40.

OWNER: Q.C. EXPLORATIONS LTD., 408, 470 Granville Street, Vancouver.

METALS: Gold, silver, copper, lead, zinc.

DESCRIPTION: Mineralization consists of an irregular, faulted quartz vein which cuts northwesterly trending, folded argillaceous sedimentary rocks ajdacent to a granodiorite contact. The quartz vein carries common sulphides as well as gold and silver values. The main workings are situated on the QC 3 claim.

WORK DONE: 1972 – EM survey over a 400 by 200-foot grid on the QC 1-4.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1949, p. 218; Assessment Report 4252.

MOUNT WADDINGTON 92N

FLY (Fig. C, No. 114)

LOCATION: Lat. 51° 36′ Long. 124° 29′ (92N/9W)
CLINTON M.D. Three miles west of Tatlayoko Lake, on the north fork of Jamison Creek, at approximately 6,500 feet elevation.

CLAIMS: FLY 1 to 36.

OWNER: VANCO EXPLORATIONS LIMITED, Box 221, Commerce Court, Toronto, Ont.

DESCRIPTION: Pyrite and minor malachite occur in a roof pendant of Cretaceous volcanic rocks lying in Late Cretaceous or Early Tertiary quartz diorite of the Coast Plutonic Complex.

WORK DONE: Surface diamond drilling, five holes totalling 2,230 feet on Fly 2, 3, and 4.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 309.

A&E (92N-32) (Fig. C, No. 115)

LOCATION: Lat. 51° 37′ Long. 125° 05′ (92N/11E)
CLINTON M.D. Three and one-half miles northwest of Twist Lake, at the head of Sand Creek, at approximately 5,500 feet elevation.

CLAIMS: A&E 1 to 48.

OWNER: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The claims are underlain by Late Cretaceous or Early Tertiary biotite granodiorite of the Coast Plutonic Complex. Pyrite, minor chalcopyrite, and minor molybdenite occur in fractures in biotite granodiorite.

WORK DONE: Surface geological mapping, 1 inch equals one-half mile and geochemical silt and rock survey, 152 samples covering all claims.

REFERENCE: Assessment Report 4809.

MOUNTAIN BOSS (92N-10) (Fig. C, No. 117)

LOCATION: Lat. 51° 48′ Long. 125° 05′ (92N/14E)
CARIBOO M.D. Twenty-two miles west-southwest of Tatla Lake post office, on the northeast flank of Perkins Peak, at approximately 7,000 feet elevation.

CLAIMS: Mineral Lease M-26 comprising BRITON, BELCHOR 1 to 8, IRON CROWN NO. 7, MONARCH, HEATHER, BLUE BELL (Lots 1062 to 1071, 1076, 1083, 1084) and APEX 1 to 54 located claims.

OWNER: KLEENA KLEENE GOLD MINES LTD., 105 West Sixth Avenue, Vancouver.

METALS: Gold, silver, copper.

DESCRIPTION: Gold-bearing arsenopyrite occurs in quartz veins cutting southerly dipping argillites, sandstones, and quartzites. Gold and minor amounts of silver and copper are present.

WORK DONE: Surface diamond drilling, two holes totalling 900 feet on Apex 4; road construction, 4,000 feet on Apex 3 and 4; trenching, 800 feet on Apex 9; stripping, 700 feet by 16 feet by 12 feet on Apex 28.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 310, 311.

PIN (92N-34) (Fig. C, No. 118)

LOCATION: Lat. 51° 49′ Long. 125° 02′ (92N/14E)
CARIBOO M.D. Twenty miles west-southwest of Tatla Lake post office, on Chromium Creek, between elevations of 5,200 and 5,700 feet.

CLAIMS: PIN 1 to 106.

OWNER: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain by Lower Cretaceous andesite lavas, pyroclastic rocks, and minor rhyodacite. A zone of intense shearing trends 070 degrees along upper Chromium Creek, and is apparently truncated to the northeast by a fault striking 300 degrees. Along the main shear zone and several parallel zones in lower Chromium Creek the rocks are altered to sericite schist. Minor chalcopyrite and malachite occur along fractures in tuff southwest of lower Chromium Creek.

WORK DONE: Reconnaissance surface geological mapping, 1 inch equals 800 feet covering all claims; magnetometer survey, 12 line-miles and frequency-domain IP survey, approximately 3 line-miles covering Pin 1-10 and 23-30; geochemical soil and rock survey, 550 samples taken at 200 by 400-foot intervals on lines generally 1,200 feet apart covering all claims.

REFERENCE: Assessment Report 4729.

ORWILL (92N-33) (Fig. C, No. 116)

LOCATION: Lat. 51° 57' Long. 125° 11' (92N/14E)
CARIBOO M.D. Fifteen miles west of Kleena Kleene, on the northwest side of the Klinaklini River, between 2,500 and 3,500 feet elevation.

CLAIMS: ORWILL 4 to 16.

OWNER: McLeod Copper Ltd.

OPERATORS: CADILLAC EXPLORATIONS LTD. and McLEOD COPPER LTD., 6849 McPherson Street, Burnaby.

METALS: Gold, silver, lead, arsenic.

DESCRIPTION: Lower Cretaceous andesite is intensively fractured and contains galena, sphalerite, arsenopyrite, chalcopyrite, argentite, pyrite, and pyrrhotite both as fracture fillings and disseminated.

WORK DONE: 1972 and 1973 – surface geological mapping, 1 inch equals 40 feet; surface diamond drilling, three holes totalling 661 feet; sampling of diamond-drill core and outcrops; road construction, 7 miles (from Kleena Kleene to claims).

REFERENCE: Assessment Report 4572.

TASEKO LAKES 92O

ASTONISHER, CHISHOLM (92O-54, 56) (Fig. C, No. 104)

LOCATION: Lat. 51° 08' Long. 122° 14' (92O/1E)
CLINTON M.D. At the headwaters of Stirrup Creek which flows south into Watson Bar Creek, at approximately 6,500 feet elevation.

CLAIMS: Crown-granted claims ASTONSIHER (Lot 7979), MONITOR (Lot 7980), CHEVALIER (Lot 7981), AJAX (Lot 7982), MONTY (Lot 7983), --- (Lot 8192), SUN FR. (Lot 8199) and located claims W 1 to 12 and LOST CHANCE.

OWNERS: C. E. Robertson and H. V. Warren.

OPERATOR: CANEX PLACER LIMITED, 700, 1030 West Georgia Street, Vancouver.

METALS: Gold, antimony, mercury.

DESCRIPTION: Highly altered quartz feldspar porphyry intrudes grey-green argillite and sandstone of Cretaceous age. Mineralization consists of pyrite, galena, stibnite, realgar, and chalcopyrite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical soil survey, 1,322 samples, 13 line-miles covering all claims; trenching, 3,250 feet on W 2, 3, 4, and 10.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1933, pp. 192, 193; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 216 (GB); 1971, p. 326 (W); Assessment Report 4743.

MUGWUMP (Fig. C, No. 107)

LOCATION: Lat. 51° 04′ Long. 122° 49′ (92O/2W)
LILLOOET M.D. On Relay Creek, 2 miles above Tyaughton Creek, at approximately 4,000 feet elevation.

CLAIMS: MUGWUMP, MUGWUMP 2 to 14, MUGWUMP 1 to 6 Fractions, HONDA 1 to 6, WINDFALL 1 to 3 Fractions.

OWNER: BALLINDERRY EXPLORATIONS LTD., 1030, 540 Fifth Avenue SW., Calgary, Alta.

METALS: Mercury, antimony.

DESCRIPTION: Cinnabar, mercury, and stibnite occur in conglomerate.

WORK DONE: Surface diamond drilling, three holes totalling 545 feet on Mugwump 10 and 2 Fraction.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 312.

B (92O-65) (Fig. C, No. 105)

LOCATION: Lat. 51° 10′ Long. 122° 53′ (92O/2W)
LILLOOET M.D. On Relay Creek, 8.5 miles above Tyaughton Creek, at approximately 5,500 feet elevation.

CLAIMS: B 1 to 12, A 1 to 12, C 1 to 12.

OWNER: EDINA RESOURCES LTD., 1065 – 16th Avenue, West Vancouver.

METAL: Copper.

DESCRIPTION: Intermediate to acidic tuffs, possibly of the Eldorado Group, are cut by quartz feldspar porphyry dykes. Pyrite is widely distributed through the intermediate tuffs, locally accompanied by pyrrhotite, and both are relatively abundant in porphyry, where they are accompanied by traces of chalcopyrite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering one-half square mile; magnetometer survey, 6 line-miles covering B 5-12.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 312; Assessment Reports 3179, 3829, 4597.

X, Y, Z (92O-64) (Fig. C, No. 106)

LOCATION: Lat. 51° 11′ Long. 122° 56′ (92O/2W)
LILLOOET M.D. Eleven miles above Tyaughton Creek, on Relay Creek, at approximately 5,500 feet elevation.

CLAIMS: X 2, 4, 6, 8, 10, 12, Y 1 to 12, Z 1 to 12.

OWNER: HOME OIL COMPANY LIMITED and U.V. INDUSTRIES INC. (Sheba Syndicate), 202, 850 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Quartz feldspar porphyry dykes intrude intermediate volcanic and sedimentary rocks. Pyrite and chalcopyrite occur in fractures and as disseminations in the porphyry and in fine-grained volcanic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; magnetometer survey, 9 line-miles; geochemical soil survey, 110 samples, 2 line-miles.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 312, 313.

BJB (92O-24) (Fig. C, No. 108)

LOCATION: Lat. 51° 06′ Long. 123° 11′ (92O/3E)
CLINTON M.D. Sixteen miles east-southeast of the south end of Upper Taseko Lake, mainly southwest of Lorna Lake, between 6,300 and 9,600 feet elevation.

CLAIMS: LORN 1 to 71.

OWNER: COMINCO LTD., 200 Granville Square, Vancouver.

METALS: Copper, molybdenum, lead, zinc.

DESCRIPTION: An Upper Cretaceous quartz monzonite stock intrudes lower Upper Cretaceous Kingsvale andesite and Upper Jurassic Relay Mountain sedimentary rocks. Mineralization is predominantly associated with the intrusive-volcanic contact and, in decreasing order, consists of pyrite, pyrrhotite, magnetite, chalcopyrite, molybdenite, arsenopyrite, native copper, lead, and zinc.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 313.

HI DO (92O-45) (Fig. C, No. 110)

LOCATION: Lat. 51° 06′ Long. 123° 37′ (92O/4E)
CLINTON M.D. Five miles south-southwest of the south end of Upper Taseko Lake, on the southeast side of Falls River, at approximately 7,800 feet elevation.

CLAIMS: HI 1 to 4, AU 1 to 24, AU 25 Fraction.

OWNER: LORD RIVER GOLD MINES LIMITED, 808, 602 West Hastings Street, Vancouver V6B 1P2.

METALS: Gold, silver.

DESCRIPTION: Gold-bearing quartz veins occur within granodiorites of the Coast Plutonic Complex. The veins contain some hessite.

WORK DONE: Surface geological mapping 1 inch equals 700 feet covering all claims; 14 miles of road rebuilt (from Fishem Lake to property); stripping, 12 feet by 4 feet on HI 1 and 2.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1937, pp. F6-F8; 1945, pp. 83, 84; 1947, p. 128.

EGGS (92O-43) (Fig. C, No. 109)

LOCATION: Lat. 51° 11′ Long. 123° 40′ (92O/4E)
CLINTON M.D. Four and one-half miles west of Upper Taseko Lake, on the Tchaikazan River, between 5,200 and 7,200 feet elevation.

CLAIMS: WASH (Lot 7831), CLEANUP (Lot 7832), GRIN (Lot 7834), BEAR (Lot 7833), HAM (Lot 7836), SAKES FR. (Lot 7835), EGGS, SUGAR, PORK, BEANS, ONION 1 to 3, A 1 to 20.

OWNER: H. Warren, *et al.*

OPERATOR: RIO TINTO CANADIAN EXPLORATION LIMITED, Box 49108, Vancouver V7X 1G4.

METALS: Gold, copper, molybdenum.

DESCRIPTION: Free gold and tellurides occur in quartz veins. Chalcopyrite and molybdenite occur as disseminations and as fracture coatings in diorite and altered volcanic rocks.

WORK DONE: Surface diamond drilling, six holes totalling 1,500 feet on Beans, Onion 1, A 13 and 20, and Sugar.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 314.

FISH LAKE (92O-41, 42) (Fig. C, No. 111)

LOCATION: Lat. 51° 28′ Long. 123° 37′ (92O/5E)
CLINTON M.D. Six miles north of the north end of Lower Taseko Lake, surrounding Fish Lake, at approximately 4,800 feet elevation.

CLAIMS: TK, BJ, K, etc., totalling approximately 200.

OWNERS: Corbin J. Robertson and Taseko Mines Limited.

OPERATOR: QUINTANA MINERALS CORPORATION, 1215, Two Bentall Centre, Vancouver.

METALS: Copper, minor gold, trace molybdenum.

DESCRIPTION: Quartz diorite and quartz diorite porphyry stocks intrude Mesozoic volcanic rocks which are overlain unconformably by Miocene basalts. Porphyry-type mineralization occurs in quartz diorite and hornfels and consists mainly of chalcopyrite and pyrite and traces of molybdenite.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering TK claims; surface diamond drilling, 15 holes totalling 10,034 feet on TK 4, 5, 6, 7, 8, and 19; surface workings mapped, 1 inch equals 2,000 feet; road construction, 2 miles (access to drill sites).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 314.

BJ (92O-66) (Fig. C, No. 112)

LOCATION: Lat. 51° 20′ Long. 122° 30′ (92O/8W, 7E)
CLINTON M.D. On the west slope of Black Dome Mountain, at approximately 6,700 feet elevation.

CLAIMS: BJ 1 to 6.

OWNER: ALFRED J. SKIBER, 19 Crescent Blvd. SW., Calgary, Alta.

METALS: Gold, silver.

DESCRIPTION: Black Dome Mountain is underlain by basalt flows of uncertain age that dip southeast of 45 degrees. They are cut by gold-bearing quartz fissure veins which strike 030 degrees. In 1973 an 18-inch vein was found on BJ 5, on strike with the Giant vein. The vein consists of quartz, calcite, and rare electrum-bearing pyrite, and has a surface coating of goethite and pyrolusite.

WORK DONE: Surface geological mapping, 1 inch equals 300 feet; limited testing for copper with rubeanic acid; 61 feet of hand trenching; 1,500 feet of trail.

REFERENCE: Assessment Report 4549.

LLL (Fig. C, No. 113)

LOCATION: Lat. 51° 46' Long. 122° 30' (92O/15E, 16W)
CLINTON M.D. Two miles from the Chilcotin River, on Cargile Creek.

CLAIMS: LLL, totalling approximately 50.

OWNER: Walter Lawrin.

OPERATOR: GENESEE MINING CORPORATION LTD., c/o Walter Lawrin, 119 Yale Road West, Chilliwack.

DESCRIPTION: Argillaceous sedimentary rocks and andesitic volcanic rocks are exposed on the southern portion of the claims. To the west and outside the boundary of the claims, there is a prominent quartz monzonite plug. Pyrite and pyrrhotite occur in most of the rock types.

WORK DONE: 1972 – linecutting, magnetometer survey, and geochemical soil survey covering LLL 746, 748 to 750, 752, 761, 762, 765, and 767.

REFERENCE: Assessment Report 4460.

BONAPARTE RIVER 92P

AJS (92P-50) (Fig. C, No. 71)

LOCATION: Lat. 51° 00' Long. 120° 27' (92P/1W; 92I/16W)
KAMLOOPS M.D. Ten miles west-southwest of McLure, 2 miles north of Wentworth Lake, at approximately 5,200 feet elevation.

CLAIMS: RAVE 1 to 73, NANCY 1 to 14.

OWNER: AMOCO CANADA PETROLEUM COMPANY LTD., Mining Division, 2160, 1055 West Hastings Street, Vancouver V6E 2E9.

METALS: Molybdenum, copper.

DESCRIPTION: A quartz diorite stock and feldspar porphyry dykes intrude metagreywackes of the Cache Creek Group. Mineralization noted includes molybdenite and chalcopyrite.

WORK DONE: Topography mapped; surface geological mapping, 1 inch equals 1,000 feet covering all claims; magnetometer survey, 30 line-miles covering all claims; IP survey, 12 line-miles covering Rave 24, 26, 33-44, 55, 57-68, 71 and Nancy 10, 12; geochemical silt, soil, and rock survey, 500 samples covering all claims; surface diamond drilling, two holes totalling 981 feet on Rave 62 and 64.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 234; Assessment Report 4665.

HOOP (Fig. C, No. 72)

LOCATION: Lat. 51° 10' Long. 120° 26' (92P/1W)
KAMLOOPS M.D. Five miles south of the east end of Bonaparte Lake, between 4,500 and 5,000 feet elevation.

CLAIMS: HOOP 1 to 118, HOOP 1 and 2 Fractions.

OWNER: PICKANDS MATHER & CO., 216, 475 Howe Street, Vancouver.

DESCRIPTION: The claims are underlain by quartz mica schist of the Cache Creek Group intruded by granitic rocks of the Upper Triassic to Lower Jurassic Thuya batholith and unconformably overlain by Miocene plateau basalts. Traces of malachite and molybdenite have been found in float near Dagger Lake.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; magnetometer survey, 65 line-miles covering all claims; geochemical soil survey, 992 samples, 18.8 line-miles.

REFERENCES: Assessment Reports 4633, 4634.

HAMILTON CREEK, SAVONA (92P-85, 87, 126, 127) (Fig. C, No. 73)

LOCATION: Lat. 51° 11' Long. 120° 54' (92P/2W)
CLINTON M.D. Thirteen miles southwest of the west end of Bonaparte Lake, surrounding Vidette Lake, at approximately 3,000 feet elevation.

CLAIMS: VID 1 to 43, VID 1 to 3 Fractions, DET 1 to 16, 19 to 22, 30, Mineral Leases M-32 (NEW HOPE, Lot 4751), M-33 (ARGENTIA NO. 1, Lot 4766), M-34 (SEARCHER NO. 3, PIONEER, TF FRACTION, Lots 4745, 4746, 4762), M-35 (VALLEY NO. 1, Lot 4747), M-38 (VALLEY NO. 2, Lot 4748).

OPERATOR: KEDA RESOURCES LIMITED, 6, 219 Victoria Street, Kamloops.

METALS: Gold, silver, copper, molybdenum.

DESCRIPTION: The claims are underlain by Upper Triassic volcanic rocks of the Nicola Group cut by granitic rocks of the Upper Triassic to Lower Jurassic Thuya batholith and overlain unconformably by extensive Miocene plateau basalts. Gold-silver-copper mineralization occurs in northwesterly trending quartz and quartz-carbonate veins which are found at several locations on the property.

WORK DONE: 1972 – prospecting and geochemical soil survey, 400 samples.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1936, pp. F36, F41-F43; 1940, p. 60; *Geol. Surv., Canada*, Mem. 179, pp. 34-36; Assessment Report 4257.

R, V, GILL (Fig. B, No. 136)

LOCATION: Lat. 50° 59' Long. 121° 23' (92I/14W; 92P/3W)
Report on this property in section 92I/14W.

DON, RON (Fig. C, No. 74)

LOCATION: Lat. 51° 04' Long. 121° 34' (92P/4E)
CLINTON M.D. One mile southeast of Clinton, between 3,000 and 3,500 feet elevation.

CLAIMS: DON 1 to 22, 22A, 23 to 31, RON 1, 2, 9, 10, 20, Mineral Lease M-27 (CLIFFORD, ADA B, Lots 4791, 4792).

OPERATOR: ACROLL OIL & GAS LTD., 574 Calgary Place One, 330 Fifth Avenue SW., Calgary, Alta.

WORK DONE: 1972 – geochemcial survey, 24 line-miles, 425 samples collected and analysed.

REFERENCE: Assessment Report 4623.

BD, VB (92P-5) (Fig. C, No. 144)

LOCATION: Lat. 51° 04′ Long. 121° 06′ (92P/6E)
CLINTON M.D. Thirteen miles east of 70 Mile House, on Rayfield River, at approximately 3,000 feet elevation.

CLAIMS: BD 51, 53 to 62, 65 to 70, 77 to 81, 83, VB 1 to 4, 11, BRUCE 2, BRUCE 3 Fraction, DAN 1 and 2 Fractions.

OWNER: PERRY, KNOX, KAUFMAN, INC., Box 14336, Spokane, Wash.

METAL: Copper.

DESCRIPTION: The claims are underlain by diorite, monzonite, syenite, and nepheline syenite pegmatite, all of which could be phases of a zoned intrusion. Bornite, chalcopyrite, and chalcocite occur in the syenite as disseminations and along veinlets.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering VB 2, 11, 61 and BD 6, 60, 66, 68; surface diamond drilling, four holes totalling 1,200 feet on BD 58, 60, and 68; road construction.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 218-221; 1972, p. 316; Assessment Report 2135.

JIM (Fig. C, No. 75)

LOCATION: Lat. 51° 24′ Long. 121° 07′ (92P/6E)
CLINTON M.D. Fourteen miles northeast of 70 Mile House, on the north side of Jim Lake, at approximately 3,500 feet elevation.

CLAIMS: JIM 1 to 13, 15, 17, 19, 21, 23, 25 to 28.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby V5G 1H4.

DESCRIPTION: The property is covered mostly by Pleistocene glacial overburden, the only rock exposures being part of a Tertiary gabbro intrusion.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; IP survey, 3.21 line-miles; magnetometer survey, 3.97 line-miles; geochemical soil survey, 3.97 line-miles covering all claims; surface diamond drilling, two holes totalling 221 feet on Jim 5, 6, 7, and 8.

DUM (Fig. C, No. 80)

LOCATION: Lat. 51° 27′ Long. 120° 19′ (92P/8W)
KAMLOOPS M.D. Six miles west-northwest of Little Fort, 1 mile west of Dum Lake, at approximately 4,000 feet elevation.

CLAIMS: DUM 1 to 24.

OWNER: RIO TINTO CANADIAN EXPLORATION LIMITED, Box 49108, Vancouver V7X 1G4.

DESCRIPTION: The claims are underlain by granodiorite of the Upper Triassic to Lower Jurassic Thuya batholith which to the east are in contact with Upper Triassic volcanic rocks of the Nicola Group.

WORK DONE: Reconnaissance surface geological mapping; geochemical soil survey, 337 samples, 12 line-miles covering all claims.

REFERENCE: Assessment Report 4689.

LYN (Fig. C, No. 81)

LOCATION: Lat. 51° 29' Long. 120° 22' (92P/8W)
KAMLOOPS M.D. About 9 miles northwest of Little Fort, between Latremouille and Long Island (Janice) Lakes, at approximately 4,000 feet elevation.

CLAIMS: LYN 1 to 154, LV 27 to 68, LV 69 to 72 Fractions.

OWNER: RIO TINTO CANADIAN EXPLORATION LIMITED, Box 49108, Vancouver V7X 1G4.

DESCRIPTION: The claims are underlain mostly by granitic rocks of the Upper Triassic to Lower Jurassic Thuya batholith.

WORK DONE: Reconnaissance surface geological mapping covering Lyn 1-154; airborne magnetometer and EM survey, 107.6 line-miles covering all claims; geochemical soil survey, 373 samples, 14 line-miles covering Lyn 5-10, 33, 34, 63-69.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 307; Assessment Report 4264.

BAR (Fig. C, No. 76)

LOCATION: Lat. 51° 18' Long. 120° 04' (92P/8E)
KAMLOOPS M.D. Nine miles north-northeast of Barriere, on Newhykulston Creek, at approximately 5,000 feet elevation.

CLAIMS: BAR 5 to 24, 29 to 48.

OWNER: HIGHLAND LODE MINES LTD., 728, 510 West Hastings Street, Vancouver V6B 1L8.

DESCRIPTION: The claims are underlain by volcanic and sedimentary rocks of the Upper Paleozoic Fennell Formation.

WORK DONE: Magnetometer survey, 27.5 line-miles covering Bar 9-20, 34-44; linecutting.

REFERENCES: Assessment Reports 4434, 4776.

WINDPASS, SWEET HOME (92P-39, 40) (Fig. C, No. 78)

LOCATION: Lat. 51° 26' Long. 120° 05' (92P/8E)
KAMLOOPS M.D. Five miles east-northeast of Little Fort, on the southwest slope of Baldy Mountain, at approximately 5,000 feet elevation.

CLAIMS: Mineral Lease M-37R (WINDPASS 1 to 3, Lots 3839 to 3841), Mineral Lease M-38R (SWEET HOME, Lot 3844), Mineral Lease M-40R (GOTT, JUPITER, ELISE, ERIN, DOLLY VARDEN, MAPLE LEAF, BRENDA FR., SIGNE, Lots 3842, 3971, 3972, 3974 to 3978), Mineral Lease M-42R (DYKE FR., DYKE, BEST, DIAMOND, NUGGET, SNOWSHOE FR., SYDNEY X, BOBBY B FR., KAY FR., Lots 1607, 1615, 1618 to 1621, 3521, 3523, 3524), Mineral Lease M-44R (BLUE DIAMOND, SILVER BELL, PREMIER, RIDGEWAY, Lots 1875, 1876, 3973, 4851), Mineral Lease M-45R (FIFTY, FIFTY-ONE, Lots 1873, 1874), Mineral Lease M-46R (NORTH DANN, DONEGAL, BELFAST, Lots 3843, 3979, 3980).

OWNER: Kamad Silver Co. Ltd.

OPERATORS: GOLD RIVER MINES & ENTERPRISES LTD. (formerly Gold River Mines Ltd.) and DALTON RESOURCES LTD., 4075 Union Street, Burnaby.

METALS: Gold, copper, bismuth, iron, silver.

DESCRIPTION: The claims are underlain by volcanic and sedimentary rocks of the Upper Paleozoic Fennell Formation that are cut to the east by granitic rocks of the Cretaceous Baldy batholith. Gold-bearing mineralization is associated with a diorite to pyroxenite sill.

WORK DONE: 1972 – magnetometer and VLF EM survey, 19.8 line-miles.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1934, pp. D26, D27; 1961, p. 49; *Geol. Surv., Canada,* Summ. Rept., 1921, Pt. A, pp. 99, 100; Assessment Reports 329, 4261.

RICK (Fig. C, No. 77)

LOCATION: Lat. 51° 27' Long. 120° 03' (92P/8E)
KAMLOOPS M.D. Six miles east-northeast of Little Fort, on the south slope of Baldy Mountain, at approximately 6,500 feet elevation.

CLAIMS: RICK 1 to 8.

OWNER: DANIEL L. RABBITT, RR 4, Trans-Canada Highway 1E, Salmon Arm.

WORK DONE: 1972 and 1973 – linecutting, 12,000 feet of grid and tie line.

REFERENCE: Assessment Report 4585.

JUDY, LINE (92P-36, 37, 38) (Fig. C, No. 79)

LOCATION: Lat. 51° 28' Long. 120° 03' (92P/8E)
KAMLOOPS M.D. Seven miles northeast of Little Fort, on the north slope of Baldy Mountain, between 6,500 and 7,500 feet elevation.

(92P/9E)

CLAIMS: SS 1 to 22.
OWNER: A. Smith.
OPERATOR: DARKHAWK DEVELOPMENT CORPORATION LTD. (formerly Darkhawk Mines Ltd.), c/o 1840, 777 Hornby Street, Vancouver.
METALS: Molybdenum, copper.
DESCRIPTION: Molybdenite and chalcopyrite occur in quartz and aplite veinlets which cut dacitic rocks. Several areas of gossan have been mapped on the property.
WORK DONE: 1972 – geochemical soil survey.
REFERENCES: Assessment Reports 1047, 4267.

PEST (Fig. C, No. 87)

LOCATION: Lat. 51° 34′ Long. 120° 04′ (92P/9E)
KAMLOOPS M.D. Two miles east-southeast of Blackpool station, at the headwaters of Rennie Creek, at approximately 4,000 feet elevation.
CLAIMS: PEST 1 to 4, 6, 11 to 16.
OWNER: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.
DESCRIPTION: The claims are underlain by volcanic rocks of the Upper Paleozoic Fennell Formation which to the east are intruded by granitic rocks of the Cretaceous Baldy batholith. Outcrop is scarce.
WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 318.

MANN CREEK (92P-29) (Fig. C, No. 88)

LOCATION: Lat. 51° 35′ Long. 120° 09′ (92P/9E)
KAMLOOPS M.D. Two miles west of Blackpool station, on Mann Creek, between 1,400 and 4,500 feet elevation.
CLAIMS: X 1 to 40.
OWNER: GOLDEN EARS MINES LTD., 307, 850 West Hastings Street, Vancouver.
METALS: Copper, lead, silver.
DESCRIPTION: In the area Fennell Formation gneiss is overlain by Tertiary basalt in the valley of Mann Creek. Some calcite-epidote veins in the gneiss contain pyrite and minor chalcopyrite, a quartz-carbonate vein carries galena.
WORK DONE: Linecutting, 12 miles of grid; geochemical soil survey, 596 samples taken at 100-foot intervals along lines normally 500 feet apart; surface geological mapping, 1 inch equals 400 feet covering X 1-18, and 22-32.
REFERENCES: *Geol. Surv., Canada*, Summ. Rept., 1921, Pt. A, p. 105; Assessment Report 4777.

LUCKY, CEDAR, RS (No. 20, Fig. A)

LOCATION: Lat. 51° 36′ Long. 120° 00′ (82M/12W; 92P/9E)
Report on this property in section 82M/12W.

PYCU, LV, FORT (Fig. C, No. 82)

LOCATION: Lat. 51° 31′ Long. 120° 22′ (92P/9W)
KAMLOOPS M.D. About 10 miles northwest of Little Fort, surrounding Deer and Laurel Lakes, at approximately 4,500 feet elevation.

CLAIMS: PYCU 1 to 42, LV 11 to 92, FORT 1 to 6.

OWNER: Deer Lake Mines Ltd.

OPERATORS: BARRIER REEF RESOURCES LTD., 1418, 355 Burrard Street, Vancouver and RIO TINTO CANADIAN EXPLORATION LIMITED, Box 49108, Vancouver V7X 1G4.

METAL: Copper.

DESCRIPTION: The claims are underlain by volcanic rocks of the Upper Triassic Nicola Group cut by a body of pyroxenite and gabbro, and by granitic rocks of the Thuya batholith. Minor chalcopyrite occurs in shears.

WORK DONE: 1972 – Barrier Reef Resources Ltd. – geochemical soil and rock survey, prospecting, reconnaissance geological mapping, EM survey over two selected areas, and surface diamond drilling, three short holes; 1973 – Rio Tinto Canadian Exploration Limited – reconnaissance surface geological mapping covering LV 27-72; IP survey, 9 line-miles and ground magnetometer survey, 11 line-miles covering LV 31, 32, 41, 42, 47, 48, 55, 56, 61-64; airborne magnetometer and EM survey, 107.6 line-miles covering LV 27-72; geochemical soil survey, 887 samples, 28 line-miles covering LV 27-72.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 307; 1972, p. 320; Assessment Reports 4262, 4264, 4835.

LAKEVIEW, SILVER, RED (92P-10, 8, 27) (Fig. C, No. 83)

LOCATION: Lat. 51° 32′ Long. 120° 22.5′ (92P/9W)
KAMLOOPS M.D. Eleven miles northwest of Little Fort, surrounding Deer Lake, between 4,500 and 4,600 feet elevation.

CLAIMS: UNITED 1 to 8, UNITED 1 and 9 Fractions, SILVER 1 to 12, 21, 24 to 26, 38, 41 to 44, 109 to 112, BILL 1 to 4, SP 1 to 6, MAE 1 to 4.

OWNER: MEDALLION EXPLORATIONS LTD. (formerly United Copper Corporation Limited), 3165 Dunbar Street, Vancouver V6R 3P1.

METALS: Copper, gold, zinc, iron.

DESCRIPTION: The claims are underlain mostly by volcanic rocks of the Upper Triassic Nicola Group that are locally metasomatized near dioritic intrusions.

(92P/9W)

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering Mae 1-4 and SP 1-6; 1 inch equals 1,600 feet covering Silver 18, 19, 21, 24-26; and 1 inch equals 1,000 feet covering Bill 1, 3, and 4; surface diamond drilling, five holes totalling 105 feet on United 5.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 307; 1972, p. 320; Assessment Reports 4260, 4678, 4684.

FL (Fig. C, No. 84)

LOCATION: Lat. 51° 35′ Long. 120° 27′ (92P/9W)
KAMLOOPS M.D. Sixteen miles northwest of Little Fort, at Friendly Lake, at approximately 5,000 feet elevation.

CLAIMS: FL 1 to 149.

OWNER: Vangulf Exploration Company.

OPERATOR: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver.

METALS: Copper, molybdenum, lead, silver.

DESCRIPTION: The claims are underlain by volcanic and sedimentary rocks of the Upper Triassic Nicola Group that have been intruded by a small stock of leucogranite. Disseminated pyrite, chalcopyrite, molybdenite, and galena occur in a large altered zone adjacent to the Friendly Lake stock.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering FL 1-34 and 49-61; geochemical survey, 83 stream sediment samples covering FL 1-49 and 1,600 soil samples, 165 line-miles covering FL 21-41 and 102-145; surface diamond drilling, two holes totalling 1,384 feet on FL 25 and 27; linecutting, 29 miles of grid on FL 102-145; road construction, 1 mile on FL 25, 27, and 29.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 307; 1972, pp. 320, 321; Assessment Reports 4702, 4817.

ANTICLIMAX (92P-14, 15, 16) (Fig. C, No. 85)

LOCATION: Lat. 51° 36′ Long. 120° 18′ (92P/9W)
KAMLOOPS M.D. Twelve miles north-northwest of Little Fort, one-half mile northeast of the north end of Tintlhohtan Lake, between 4,000 and 4,500 feet elevation.

CLAIMS: MO 4, 6, 8, 10 to 18, 20 to 34, 41 to 42, MO 39 and 40 Fractions, SEVEN UP, BLUE JAY, MOOSE, LUCKY STRIKE, GORDON NO. 3, LOON, FLY, LUCKY, RUB.

OWNERS: K. Calder and Gung Loy Jim.

OPERATOR: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver.

METAL: Molybdenum.

DESCRIPTION: The claims are underlain by Lower to Middle Jurassic (?) argillite and pyroxene andesite breccia which have been intruded by a stock of leucogranite and quartz feldspar porphyry approximately 3,000 feet in diameter and of probable Cretaceous age. Pyrite and molybdenite are disseminated in the altered granitic rocks and in quartz veins.

WORK DONE: Surface diamond drilling, three holes totalling 3,882 feet on Fly, Gordon, and Seven Up.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 304; 1972, p. 321.

ELLEN, GIZELLE (92P-129) (Fig. C, No. 89)

LOCATION: Lat. 51° 32′ Long. 120° 34′ (92P/10E)
CLINTON and KAMLOOPS M.D. Eighteen miles west-northwest of Little Fort, between Wavey and Willow Lakes, between 3,900 and 4,600 feet elevation.

CLAIMS: ELLEN 1 to 64, GIZELLE 1 to 16.

OPERATOR: OREQUEST EXPLORATION SYNDICATE, 711, 850 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The claims are mainly underlain by volcanic and sedimentary rocks of the Upper Triassic Nicola Group which have been cut by a number of dykes and irregular intrusive bodies which range from diorite to monzonite in composition.

WORK DONE: 1972 – linecutting, geological, geochemical, and EM surveys.

REFERENCE: Assessment Report 4365.

SO (92P-7) (Fig. C, No. 86)

LOCATION: Lat. 51° 37′ Long. 121° 31′ (92P/10E)
KAMLOOPS M.D. Approximately 19 miles northwest of Little Fort, 3.5 miles northwest of Friendly Lake, between 4,500 and 5,500 feet elevation.

CLAIMS: FRI 1 to 17, 19, 31 to 38, BOG 3 to 42, 44 to 46, 48.

OWNER: G. H. Rayner.

OPERATOR: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

METAL: Copper.

WORK DONE: Linecutting and frequency-domain IP survey, 21 line-miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 321, 322; Assessment Report 4836.

WD (Fig. C, No. 102)

LOCATION: Lat. 51° 55′ Long. 121° 25′ (92P/14W)
CLINTON M.D. Eight miles north-northeast of Lac la Hache village, at approximately 3,200 feet elevation.

CLAIMS: WD 1 to 28.

OWNER: AMAX POTASH LIMITED, 601, 535 Thurlow Street, Vancouver V6E 3L6.

DESCRIPTION: The claims are underlain by Upper Triassic Nicola andesite cut by coarse-grained monzonite. Both these units are unconformably overlain by Eocene plagioclase andesite porphyry.

WORK DONE: IP survey, 10 line-miles covering WD 1-28; percussion drilling, three holes totalling 900 feet on WD 5, 13, 22; road construction, one-half mile on WD 5, 13, 16, 22.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 322, 323; Assessment Report 4544.

PEACH, PIT **(92P-2, 34, 35, 115)** **(Fig. C, No. 100)**

LOCATION: Lat. 51° 58' Long. 121° 19' (92P/14W)
CLINTON M.D. Thirteen miles north-northeast of Lac la Hache village, on the south side of Peach and Lower Peach Lakes, at approximately 4,000 feet elevation.

CLAIMS: PEACH 44, 46, 48, 50, 59 to 68, 73, 74, 79 to 90, 161, 163, 165, 215, 216, 230, PEACH 211 and 212 Fractions, PIT 5 to 17, 23, 26, 28, 30, 59 to 62, 67, 69 to 71, WC 170 to 173, 181 to 189, 207 to 210, WC 190 and 191 Fractions.

OWNER: Coranex Syndicate (optioned to Amax Exploration, Inc.).

OPERATOR: AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver V6E 3L6.

METAL: Copper.

DESCRIPTION: The claims are underlain by massive and fragmental volcanic rocks of the Upper Triassic Nicola Group complexly cut by intrusive bodies of dioritic to syenitic composition. Mineralization consists of chalcopyrite-pyrite stockworks in several areas near the margin of the stock.

WORK DONE: IP survey, 6 line-miles covering Peach 44, 46, 48, 79, 81, 83, 161, 163, 165 and Pit 71; magnetometer survey, 10 line-miles covering WC 186-189, 190 Fraction, 207, 208; percussion drilling, 46 holes totalling 12,600 feet on Peach 44, 45, 61, 62, 64, 79-82, 165, Pit 61, 62, 71, and WC 188, 189; road construction, 2 miles (from existing access roads to drill sites).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM. 1972, p. 324; Assessment Report 4542.

WB **(Fig. C, No. 101)**

LOCATION: Lat. 51° 58' Long. 121° 27' (92P/14W)
CLINTON M.D. Ten miles north of Lac la Hache village, 2 miles northeast of Rail Lake, at approximately 3,500 feet elevation.

CLAIMS: WB 2, 4, 6, 8, 10, 12 to 16, 18, 20, 22, 24, 26, 28 to 30, 32, 33 to 60, 69 to 78.

OWNER: AMAX POTASH LIMITED, 601, 535 Thurlow Street, Vancouver V6E 3L6.

DESCRIPTION: There are no bedrock exposures on the property but drill cuttings indicate the presence of schist and gabbro.

WORK DONE: Magnetometer survey, 15 line-miles covering WB 20, 22, 24, 26, 28-30, 32, 39, 41, 43, 45, 47, 49, 51, 78; IP survey, 3 line-miles covering WB 24, 26, 28-30, 32, 41, 43, 45, 47, 49; percussion drilling, six holes totalling 1,250 feet on WB 24, 30, 41, and 45; road construction, one-half mile on WB 24, 30, 41, 43, 45 (from existing access road to drill sites).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 323; Assessment Report 4558.

WC (92P-108, 120) (Fig. C, No. 103)

LOCATION: Lat. 51° 59' Long. 121° 25' (92P/14W)
CLINTON and CARIBOO M.D. Thirteen miles north of Lac la Hache village, on the north and south sides of Spout Lake, at approximately 3,700 feet elevation.

CLAIMS: Clinton M.D. – WC 1 to 12, 15 to 26, 29 to 40, 45 to 60, 64 to 68, 74 to 76, 90 to 96, 146, 147, WC 198 to 204 Fractions; Cariboo M.D. – WC 13, 14, 27, 28, 41 to 44, 97 to 132, 135 to 141, 192 to 197, 205, 206.

OWNER: AMAX POTASH LIMITED, 601, 535 Thurlow Street, Vancouver V6E 3L6.

METAL: Copper.

DESCRIPTION: The claims are underlain by volcanoclastic rocks of the Upper Triassic Nicola Group extensively altered to skarn and cut by a monzonite stock. Mineralization includes chalcopyrite, pyrite, and magnetite.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet covering WC 22, 24, 26, 35, 37, 39 and 200 and 201 Fractions; IP survey, 8.6 line-miles covering WC 22, 24, 26, 37-40, 45, 46; ground magnetometer survey, 13 line-miles covering WC 22, 24, 26, 35, 37, 39 and WC 200 and 201 Fractions; surface diamond drilling, seven holes totalling 3,145 feet on WC 24, 26, and 39; road construction, one-quarter mile on WC 24 and 26 (from existing access road to drill sites).

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 323, 324; Assessment Report 4490.

STAN, FIR (92P-32, 114) (Fig. C, No. 99)

LOCATION: Lat. 51° 48' Long. 121° 12' (92P/14E)
CLINTON M.D. North-northeast of 100 Mile House, on the east and southeast sides of Spring Lake, between 3,300 and 3,500 feet elevation.

CLAIMS: STAN 3 to 6, FIR 1 to 24, SKULL 1 to 18, MAC 1 to 6, BRETT 1 to 8.

OWNER: CANWAY EXPLORATIONS LTD., 12042 – 56th Avenue, Surrey.

METALS: Copper, molybdenum.

DESCRIPTION: The claims are underlain by granitic rocks of the Upper Triassic to Lower Jurassic Takomkane batholith. Chalcopyrite and molybdenite associated with fractures and potassic intrusions have been noted.

WORK DONE: Percussion drilling, eight holes totalling 1,200 feet on Stan 3, 4 and Skull 7, 9, 10.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 324, 325.

WILL (Fig. C, No. 98)

LOCATION: Lat. 51° 49′ Long. 121° 54′ (92P/14E)
CLINTON M.D. Fourteen miles north-northeast of 100 Mile House, on the north side of Wilcox Lake.

OWNER: STYNRO DEVELOPMENT LTD., 427, 470 Granville Street, Vancouver.

WORK DONE: 1972 – linecutting.

REFERENCE: Assessment Report 4258.

MATH (92P-133) (Fig. C, No. 97)

LOCATION: Lat. 51° 51′ Long. 121° 08′ (92P/14E)
CLINTON M.D. Sixteen miles north-northeast of 100 Mile House, 2 miles northeast of Lake of the Trees, at approximately 3,200 feet elevation.

CLAIMS: MATH 1 to 120, 127 to 130, 135 to 140.

OWNER: PICKANDS MATHER & CO., 216, 475 Howe Street, Vancouver.

METAL: Molybdenum.

DESCRIPTION: The claims are underlain by quartz monzonite of the Takomkane batholith. A 50-foot-wide dyke of feldspar porphyry is exposed in the north-central part of the claim area. The quartz monzonite is silicified and epidotized in the central part, where it is cut by quartz and some calcite veins. Some quartz veins contain very fine-grained molybdenite, and adjacent quartz monzonite contains finely disseminated pyrite.

WORK DONE: Linecutting, 81.5 miles of grid; surface geological mapping, 1 inch equals 400 feet covering all claims; magnetometer survey, 8.1 line-miles covering Math 11, 13, 15, 21-26; geochemical soil survey, 3,882 samples taken at 100 by 400-foot and 800-foot grid spacing covering all claims and 185 soil samples taken for mercury vapour sensing covering Math 11, 21-26, 41, 42; trenching, nine test pits on Math 11, 21, and 22.

REFERENCES: Assessment Reports 4647, 4822.

RM (92P-128) (Fig. C, No. 95)

LOCATION: Lat. 51° 49′ Long. 120° 48′ (92P/15W)
CLINTON M.D. From 2 to 8 miles northeast of Canim Lake village, on the south and east shores of Canim Lake, at approximately 3,000 feet elevation.

CLAIMS: RM 1 to 203.

OWNERS: DOME EXPLORATION (CANADA) LIMITED and NEWCONEX CANADIAN EXPLORATION LTD., 808, 525 Seymour Street, Vancouver V7B 3H7.

METAL: Copper.

DESCRIPTION: A succession of Lower to Middle Jurassic submarine volcanic rocks has been intruded by a Cretaceous diorite stock. Mineralization consists of disseminations and fracture fillings of pyrite and chalcopyrite.

WORK DONE: 1972 – linecutting, 65 miles of grid; geological mapping; magnetometer survey, 40 line-miles; geochemical survey, 700 samples, 40 line-miles; trenching; 1973 – surface geological mapping, 1 inch equals 200 feet; IP survey, 20 line-miles; geochemical soil survey, 200 samples; linecutting, 20 miles of grid.

REFERENCES: Assessment Reports 4259, 4366.

BEER (92P-125) (Fig. C, No. 94)

LOCATION: Lat. 51° 54' Long. 120° 53' (92P/15W)
CLINTON M.D. Three miles north-northwest of Eagle Creek village, 1 mile northeast of Roger Lake, at approximately 3,000 feet elevation.

CLAIMS: BEER 1 to 40, BET 1 to 8, PAT 1 to 14, SUN 1 to 10.

OWNER: ARAGON EXPLORATIONS LTD., 1763 East Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain by volcanic and sedimentary rocks of the Upper Triassic Nicola Group, cut to the northwest by granitic rocks of Upper Triassic to Lower Jurassic Takomkane batholith.

WORK DONE: 1972 – surface geological mapping; detailed and reconnaissance geochemical surveys, 166 samples; IP survey, 5.3 line-miles; magnetometer survey, 8 line-miles; bulldozer trenching on Beer 4, 10 and Bet 2, 4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 325; Assessment Reports 4265, 4266.

NOD (92P-112) (Fig. C, No. 93)

LOCATION: Lat. 51° 55' Long. 120° 56' (92P/15W)
CLINTON M.D. Four miles northwest of Eagle Creek village, immediately northwest of Roger Lake, at approximately 3,200 feet elevation.

CLAIMS: JULY 1 to 34.

OWNER: UTAH MINES LTD., 412, 510 West Hastings Street, Vancouver V6B 1L9.

METAL: Copper.

DESCRIPTION: Syenitic dykes have intruded a contact breccia zone. The breccia zone is composed of welded angular fragments of metavolcanic rocks which belong to the Triassic Nicola Group and granitic fragments which belong to the Takomkane batholith. Minor pods and impregnations consisting of chalcopyrite and bornite occur in the syenitic dykes and breccia zone.

WORK DONE: Surface diamond drilling, one hole totalling 500 feet on July 25.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 325, 326; Assessment Report 4496.

SHERI (92P-113, 132) (Fig. C, No. 96)

LOCATION: Lat. 51° 56′ Long. 120° 52′ (92P/15W)
CLINTON M.D. Five miles north of Eagle Creek village, at approximately 3,300 feet elevation.

CLAIMS: SHERI 1 to 97, 99 to 130, SUCC 1 to 20.

OWNER: PICKANDS MATHER & CO., 216, 475 Howe Street, Vancouver.

METALS: Copper, iron.

DESCRIPTION: The property is underlain predominantly by hornblende of the Takomkane batholith, with quartz monzonite underlying the western claims. In the southeast the hornblende is brecciated and intruded by diorite, and in the east it contains inclusions of Nicola Group basalt and tuff. The hornblende and quartz monzonite are intruded by aplite and trachyte porphyry dykes. The rocks are variably altered, and in the east are generally intensely silicified. Chalcopyrite occurs in two small, widely spaced outcrops of hornblende near the centre of the claim area.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all Sheri claims; linecutting, 76 miles of grid; magnetometer survey, 71 line-miles covering Sheri claims; geochemical survey, 3,270 soil samples and 66 lake sediment samples taken at 100 by 800-foot grid spacing and 112 soil gas mercury samples taken at 200-foot intervals covering Sheri claims.

REFERENCES: Assessment Reports 4734, 4821.

CHRIS (92P-130, 131) (Fig. C, No. 92)

LOCATION: Lat. 51° 54′ Long. 120° 35′ (92P/15E)
CLINTON M.D. Two miles northeast of the east end of Canim Lake, at approximately 3,200 feet elevation.

CLAIMS: CHRIS 1 to 70.

OWNER: PICKANDS MATHER & CO., 216, 475 Howe Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are mainly underlain by volcanic and sedimentary rocks of Lower to Middle Jurassic age. Mineralization includes traces of chalcopyrite and copper stain.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; linecutting, 50 miles of grid; geochemical survey, 2,095 soil samples taken at 100 by 400-foot and 800-foot grid spacing covering all claims and 109 samples of soil gas mercury taken and measured covering Chris 9, 11, 17-20, 25-28, 46-50.

REFERENCE: Assessment Report 4733.

IQ (Fig. C, No. 91)

LOCATION: Lat. 51° 58′ Long. 120° 33′ (92P/15E)
KAMLOOPS M.D. Five miles north of the west end of Mahood Lake, on the south side of Spanish Creek, at approximately 3,000 feet elevation.

CLAIMS: IQ 71, 81 to 83, 91 to 94.

OWNER: C. Warren Hunt.
OPERATOR: C. WARREN HUNT EXPLORATION LTD., 1119 Sydenham Road, Calgary, Alta.
DESCRIPTION: There are no bedrock exposures on the property, but the claims are believed to be underlain by argillite of the Upper Triassic Nicola Group.
WORK DONE: Biogeochemical survey, 125 samples, 2.5 line-miles covering IQ 83, 93, and 94.
REFERENCE: Assessment Report 4769.

NOD, SL, CS (92P-22, 26, 103) (Fig. C, No. 90)

LOCATION: Lat. 51° 47′ Long. 120° 24′ (92P/16W)
KAMLOOPS M.D. Eighteen miles northwest of Clearwater, surrounding Patricia Lake, at approximately 3,000 feet elevation.
CLAIMS: WAP 1 to 156.
OWNER: AMOCO CANADA PETROLEUM COMPANY LTD., 2160, 1055 West Hastings Street, Vancouver V6E 2E9.
METAL: Molybdenum.
DESCRIPTION: The mineralization is in quartz veinlets cutting quartz monzonite of the Cretaceous Raft batholith.
WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; magnetometer survey, 30 line-miles covering Wap 1-84; geochemical soil, silt, and rock survey, 569 samples covering all claims.
REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, p. 132 (MAD, NOD); *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 231 (SL); 1971, pp. 336, 337 (CS); Assessment Reports 1013, 2571.

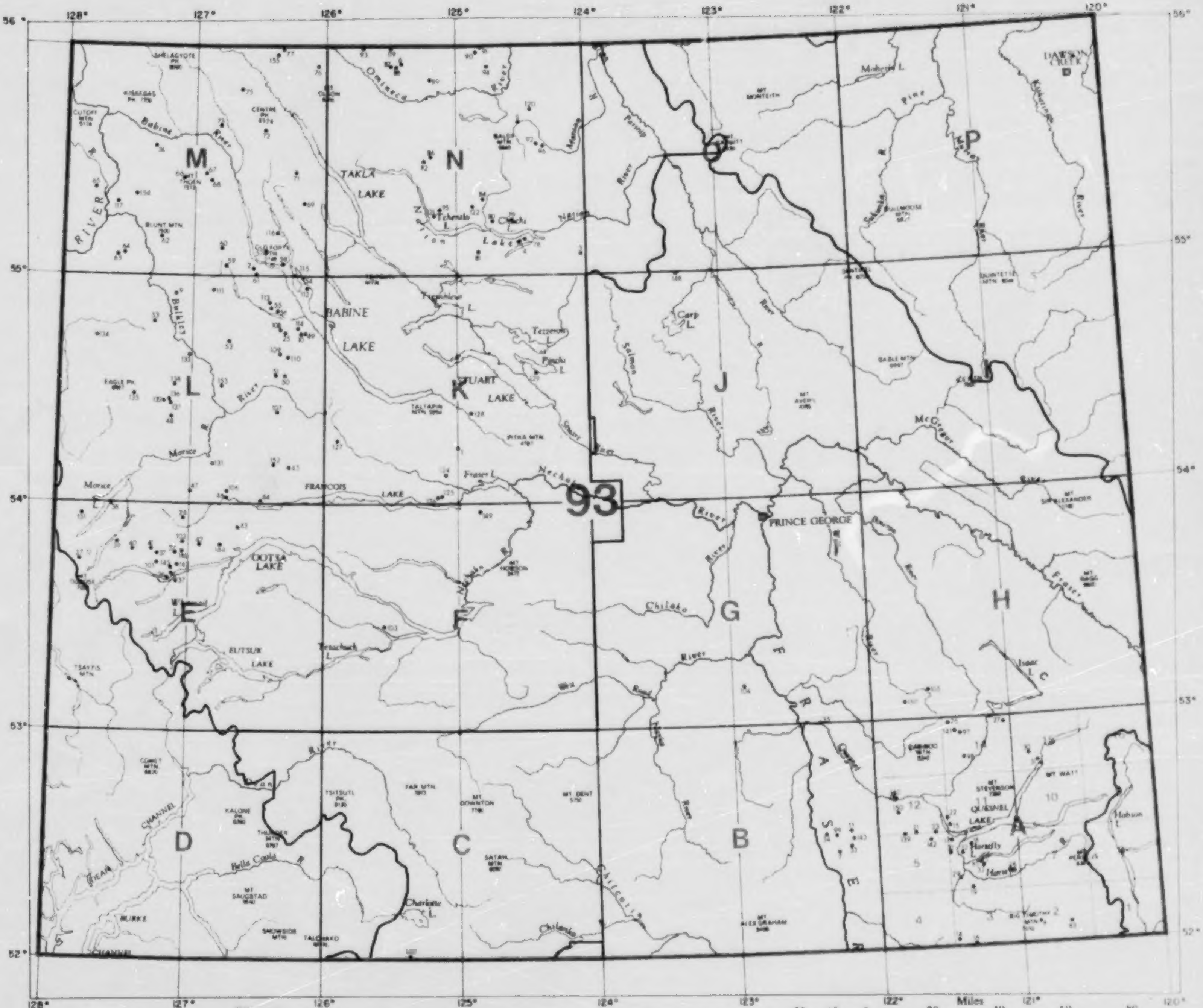
CAPE SCOTT 102I

BEN, HUR (Fig. C, No. 125)

LOCATION: Lat. 50° 44′ Long. 128° 01′ (102I/9E)
NANAIMO M.D. Five and one-half miles north of Holberg.
CLAIMS: BEN 1 to 20, HUR 1 to 20.
OWNERS: H. Veerman and W. G. Botel.
OPERATOR: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver.
WORK DONE: Frequency-domain IP survey, 7.5 line-miles covering Ben 1, 14-20 and Hur 2-7, 18-20.
REFERENCE: Assessment Report 4872.

PUP (Fig. C, No. 124)

LOCATION: Lat. 50° 44′ Long. 128° 00′ (92L/12W; 102I/9E)
Report on this property in section 92L/12W.



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93
TAKLA LAKE
BABINE LAKE
STUART LAKE
OOTSA LAKE
EUTSUK LAKE
QUESNEL LAKE
PRINCE GEORGE
DAWSON CREEK
Babine River
Omineca River
Morice
Nechako River
Fraser L.
FRANCOIS LAKE
Tchentlo L.
Chuchi L.
Nation Lakes
Trembleur L.
Tezzeron L.
Pinchi L.
Carp L.
Moberly L.
Pine R.
McGregor River
Salmon
Parsnip River
Chilako
Blackwater River
Chilcotin
Chilanko
Bella Coola R.
DEAN CHANNEL
BURKE CHANNEL
Charlotte L.
Tetachuck L.
Whitesail L.
Horsefly
Hobson L.
Isaac L.
FRASER
CARIBOO
MT MONTEITH
GABLE MTN
MT AVERIL
PITKA MTN
TALTAPIN MTN
QUINTETTE MTN
MT ALEXANDER
MT STEVENSON
MT WATT
MT DENT
MT DOWNTON
FAR MTN
SATAH MTN
MT SAUGSTAD
KALONE PK
THUNDER MTN
TSITSUTL PK
COMET MTN
TSAYTIS MTN
SNOWSIDE MTN
TALCHAKO MTN
MT ALEXANDER GRAHAM
MT HOBSON
SHELAGYOTE PK
KISPIOX
CUTOFF MTN
BLUNT MTN
EAGLE PK
CENTRE PK
MT TAYLOR
BALDY MTN
Kilometres
50
0
50
100
Miles
20
10
0
20
40
60
80

Figure D. INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 93

KEY TO PROPERTIES ON INDEX MAP, FIGURE D.

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10. TACHI, page 350.
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12. DW, CUP, page 321.
14. WA, page 288.
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16. SL, page 288.
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19. HS, page 290.
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22. CEDAR, page 293.
23. BJ, CARIBOO-BELL, page 293.
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98. CARIBOO-HUDSON, page 294.
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101. EMERALD GLACIER MINE, page 321.
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EAST CENTRAL BRITISH COLUMBIA
(NTS Division 93 Figure D)

QUESNEL LAKE 93A

DIANE (Fig. D, No. 83)

LOCATION: Lat. 52° 05' Long. 120° 38' (93A/2E)
CARIBOO M.D. Approximately 10 miles north of the east end of Canim Lake, bordering the southwest shore of McNeil Lake.

CLAIMS: DIANE 1 to 64.

OWNER: PICKANDS MATHER & CO., 216, 475 Howe Street, Vancouver.

DESCRIPTION: The claims are underlain predominantly by basalts, minor dacite, tuff, and greywacke.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical survey, 90 soil-gas mercury samples taken at 500-foot intervals on six lines and 1,691 soil samples taken at 100 by 800-foot grid spacing; linecutting, 40 miles of grid covering all claims.

REFERENCE: Assessment Report 4768.

BOSS MOUNTAIN MINE (93A-1, 13 to 16) (Fig. D, No. 8) By A. D. Tidsbury

LOCATION: Lat. 52° 06' Long. 120° 54' (93A/2W)
CARIBOO M.D. Approximately 35 miles northeast of 100 Mile House, on the northeast slope of Takomkane Mountain.

CLAIMS: Eleven Crown-granted claims including TOOTY FRUITY (Lot 11116), ANNE (Lot 11117), GERALDING (Lot 11118), BLACKIE (Lot 11119), UTOO (Lot 11120), and ADANAC (Lot 11123) and the located claims BEN, BOSS, CC, DAP, FC, HH, PR, RO, ROVER, etc., totalling 83.

OWNER: NORANDA MINES, LIMITED (Boss Mountain Division), 1050 Davie Street, Vancouver V6E 1M4; mine address, Hendrix Lake.

METAL: Molybdenum.

DESCRIPTION: Molybdenite occurs as veinlets and seams in two silicified quartz diorite breccia pipes and as stockwork lenses and irregular veinlets in quartz veins.

WORK DONE:

The mine closed on December 3, 1971 and was put on caretaker basis. During the latter part of 1973, the campsite, townsite, and mine were reconditioned preparatory to production by an average work force of 17 employees.

The concentrator operated on a one-shift test basis for 14 days in December, treating approximately 6,500 tons of ore.

Development work included 82 feet of raising and 284 feet of subdrifting. Diamond drilling consisted of four surface holes totalling 933 feet and 11 underground holes totalling 1,091 feet. Magnetometer and geochemical soil surveys were also conducted.

No reclamation was undertaken in 1973 and there were no plant alterations or extensions.

(93A/3W)

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1966, p. 133; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 129; 1972, p. 329.

SL (Fig. D, No. 16)

LOCATION: Lat. 52° 02′ Long. 121° 20′ (93A/3W; 92P/14W)
CARIBOO and CLINTON M.D. Twenty-five miles northeast of Lac la Hache, centred 2 miles northeast of Spout Lake.

CLAIMS: SL 1 to 245.

OWNER: CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.

DESCRIPTION: Syenite and granodiorite of the Takomkane batholith are overlain by a band of Miocene plateau basalt.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet; VLF EM survey, 90 line-miles; magnetometer survey, 100 line-miles; and geochemical soil survey, 2,500 samples, 100 line-miles covering all claims.

REFERENCE: Assessment Report 4697.

WA (Fig. D, No. 14)

LOCATION: Lat. 52° 03′ Long. 121° 26′ (93A/3W)
CARIBOO M.D. On Eagle Creek, at the southeast corner of land lot 9425, at approximately 3,600 feet elevation.

CLAIMS: WA 1 to 16.

OWNER: AMAX POTASH LIMITED, 601, 535 Thurlow Street, Vancouver V6E 3L6.

DESCRIPTION: The area is underlain by Tertiary plateau basalt which outcrops sparingly in this area.

WORK DONE: Magnetometer and time and frequency-domain IP survey; geochemical soil survey, 26 samples taken at 200-foot intervals; and 1 mile of linecutting covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 330; Assessment Reports 3882, 4556.

PINE, FLY (93A-2, 61) (Fig. D, No. 32)

LOCATION: ANT 1 to 58 –
Lat. 52° 24′ Long. 121° 31′ (93A/5E)
CARIBOO M.D. Seven and one-half miles northwest of Horsefly, immediately south of Antoine Lake.
HOOK 1 to 72, 87, 89, HOOKER 1 Fraction –
Lat. 52° 24′ Long. 121° 22′ (93A/6W)
CARIBOO M.D. Five miles north of Horsefly, surrounding Lea and Jim Lowry Lakes.
LEM 1 to 80, FLY 1 to 40 –
Lat. 52° 20′ Long. 121° 16′ (93A/6W)

(93A/5E)

CARIBOO M.D. Six miles east of Horsefly, extending southeast from the southwest tip of Horsefly Lake.

PAT 1 to 34, 37 to 50 –

Lat. 52° 17′ Long. 121° 15′ (93A/6)

CARIBOO M.D. Ten miles east-southeast of Horsefly, approximately 1 mile due north of Horsefly River.

COREY 1 to 82 –

Lat. 52° 18′ Long. 121° 06′ (93A/6E)

CARIBOO M.D. Thirteen miles east of Horsefly on the northwest slope of Horsefly Mountain.

CLAIMS: ANT 1 to 58, HOOK 1 to 72, 87, 89, HOOKER 1 Fraction, LEM 1 to 80, FLY 1 to 40, PAT 1 to 34, 37 to 50, COREY 1 to 82.

OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver V7P 2R4.

METAL: Copper.

DESCRIPTION: Disseminated pyrite, chalcopyrite, and bornite have been identified in alkaline plutons which have intruded Jurassic volcanic rock.

WORK DONE: Surface geological mapping, 1 inch equals one-half mile (regional); IP and magnetometer survey, 93 line-miles covering Pat, Lem, and Fly claims; geochemical soil survey, 1,624 samples covering Ant, Hook, Fly, Lem, Corey, and Pat claims.

REFERENCES: Assessment Reports 883, 2729, 4679.

WET, GAVIN (93A-59) (Fig. D, No. 139)

LOCATION: Lat. 52° 30′ Long. 121° 45′ (93A/5, 12)

CARIBOO M.D. Immediately north and extending westward from Gavin Lake to the Likely road, between 3,100 and 3,900 feet elevation.

CLAIMS: GET 1 to 14, GT 1 to 60.

OWNER: ZUBEX RESOURCES LTD., Box 158, Horsefly.

METALS: Copper, molybdenum.

DESCRIPTION: A quartz monzonite porphyry dyke swarm has intruded interbedded volcanic and sedimentary rock which underlies the property. Mineralization consists of minor molybdenite, chalcopyrite, and pyrite which occur as fine disseminations along quartz and quartz-K-feldspar veinlets forming a stockwork associated with the dyke swarm.

WORK DONE: Linecutting, approximately 19 miles of grid on GT 1-24; road construction, 3 miles on Get 7-14.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 208; Assessment Report 4569.

PP (Fig. D, No. 142)

LOCATION: Lat. 52° 29′ Long. 121° 36′ (93A/5E, 12E)

CARIBOO M.D. Approximately 9 miles south of Likely, 2 miles south of Polley Lake.

CLAIMS: PP 1 to 36.

(93A/6W)

OWNER: CARL ZUBER, Box 158, Horsefly.
WORK DONE: Linecutting, 28 miles of grid.
REFERENCE: Assessment Report 4864.

HS (93A-78) (Fig. D, No. 19)

LOCATION: Lat. 52° 16′ Long. 121° 22′ (93A/6W)
CARIBOO M.D. Five and one-half miles south of Horsefly Post Office, at approximately 3,500 feet elevation.
CLAIMS: HS 1 to 57.
OWNER: EXPLORAM MINERALS LTD., 1004, 510 West Hastings Street, Vancouver V6B 1L8.
METAL: Copper.
DESCRIPTION: Chalcopyrite was noted in volcanic rocks exposed on the property.
WORK DONE: Claims surveyed; linecutting, 12.5 miles of grid; magnetometer survey, 11.3 line-miles; time-domain IP survey, 7 line-miles covering HS 1-11, 16, 18, 29-31, 33, 34, 36, 44-46.
REFERENCE: Assessment Report 4766.

MOFFAT, FALLS (93A-75) (Fig. D, No. 29)

LOCATION: FALLS –
Lat. 52° 17′ Long. 121° 28′ (93A/6W)
MOFFAT –
Lat. 52° 17′ Long. 121° 26′ (93A/6E)
CARIBOO M.D. The FALLS claims are situated 4 miles south of Horsefly on Moffat Creek, west of the junction of Mussel Creek and the MOFFAT claims are situated 3 miles south of Horsefly on Moffat Creek, at the junction of Mussel Creek.
CLAIMS: MOFFAT 1 to 14, FALLS 1 to 14.
OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.
METAL: Copper (Moffat claims).
DESCRIPTION: Minor chalcopyrite and native copper have been identified in outcrops of the underlying poorly exposed, flat-lying, Tertiary basalt flows on the Moffat claims.
WORK DONE: Surface diamond drilling, one hole totalling 130 feet on Falls 4 and one hole totalling 98 feet on Moffat 2.

BREN (93A-79) (Fig. D, No. 28)

LOCATION: Lat. 52° 20′ Long. 121° 05′ (93A/6E)
CARIBOO M.D. Seventeen miles east of Horsefly, 2.9 miles southeast of Horsefly Mountain.
CLAIMS: BRENDA 1 to 36.

(93A/6W)

OWNERS: SULLIVAN & RODGERS, 1022, 510 West Hastings Street, Vancouver.

METALS. Arsenic, gold.

DESCRIPTION: Disseminated pyrite and pyrrhotite as well as minor arsenopyrite veins have been identified in silicified andesitic rocks intruded by quartz porphyry dykes.

WORK DONE: Magnetometer survey, 9 line-miles covering Brenda 13-20; geochemical soil survey, 400 samples, 13.9 line-miles covering Brenda 1 to 36; trenching, 1,500 feet on Brenda 6 and 17.

CZ (93A-69) (Fig. D, No. 85)

LOCATION: Lat. 52° 22.5′ Long. 121° 16.5′ (93A/6W)
CARIBOO M.D. Six miles east-northeast of Horsefly, south shore of Horsefly Lake, at approximately 3,000 feet elevation.

CLAIMS: CZ 1 to 28.

OWNER: Zubex Resources Ltd.

OPERATORS: NEWMONT MINING CORPORATION OF CANADA LIMITED, 1230, 355 Burrard Street, Vancouver V6C 2G8 and NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.

METAL: Copper.

DESCRIPTION: The property lies within the major Quesnel Trough tectonic unit where the claims are underlain by green andesite and tuff of Lower Jurassic age. A small plug of syenite occurs on the northeast corner of the property. Mineralization consists of chalcopyrite, pyrite, and magnetite as fracture fillings in minor amounts.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; IP survey, 5 line-miles; magnetometer survey, 17 line-miles; geochemical soil survey, 1,050 samples covering CZ 3-10 and 12-20; grid flagged; road construction, 1.5 miles on CZ 7, 8, 10, 13, 14, 16; surface diamond drilling, four holes totalling 1,822 feet on CZ 5, 10, 12, and 16.

AL (93A-77) (Fig. D, No. 18)

Lat. 52° 28′ Long. 121° 20′ (93A/6W)
CARIBOO M.D. Eight miles north of Horsefly at Kwun Lake, at approximately 3,000 feet elevation.

CLAIMS: AL 1 to 114.

OWNERS: DOME EXPLORATION (CANADA) LIMITED, 600, 365 Bay Street, Toronto, Ont. and NEWCONEX CANADIAN EXPLORATION LTD., 808, 525 Seymour Street, Vancouver V6B 3H7.

METAL: Copper.

DESCRIPTION: A succession of Triassic submarine volcanic rock has been intruded by a diorite stock. Mineralization includes disseminations and fracture fillings of iron and copper sulphides.

(93A/6W)

WORK DONE: Linecutting, 30 miles of grid; geochemical soil survey, 200 samples taken at 200 and 400-foot by 1,000-foot grid spacing covering central three-quarters of Al claims.

REFERENCE: Assessment Report 4860.

LYNDA, SL (93A-58) (Fig. D, No. 17)

LOCATION: Lat. 52° 28′ Long. 121° 28′ (93A/6W)
CARIBOO M.D. On the south side of Mitchell Bay, on Quesnel Lake, 10 miles north of Horsefly, near Shiko Lake, at approximately 3,000 feet elevation.

CLAIMS: SL 1 to 100.

OWNERS: DOME EXPLORATION (CANADA) LIMITED, 600, 365 Bay Street, Toronto, Ont. and NEWCONEX CANADIAN EXPLORATION LTD., 808, 525 Seymour Street, Vancouver V6B 3H7.

METAL: Copper.

DESCRIPTION: A succession of Triassic submarine volcanic rocks has been intruded by a small diorite stock which in turn has been intruded by hornblende porphyry. Pyrite and chalcopyrite are disseminated through part of the hornblende porphyry and coat fractures in volcanic breccia near the diorite.

WORK DONE: Reconnaissance surface geological mapping, 1 inch equals 500 feet; magnetometer survey, 40 line-miles; time-domain IP survey, 8 line-miles; and geochemical soil survey, 750 samples taken at 400 by 1,000-foot and 200 by 500-foot grid spacing; 40 miles of linecutting; trenching, 3,000 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 209; Assessment Reports 4557, 4601.

JOY (93A-72) (Fig. D, No. 15)

LOCATION: Lat. 52° 33′ Long. 121° 27′ (93A/11W)
CARIBOO M.D. Five miles southeast of Likely, at approximately 3,500 feet elevation.

CLAIMS: JOY 1 to 6, JOCK 3 to 8.

OWNER: D.A. Holdings Ltd.

OPERATOR: LEEMAC MINES LTD., 210, 890 West Pender Street, Vancouver.

METALS: Copper, gold.

DESCRIPTION: Pyrite with chalcopyrite and gold values occurs in Middle or Upper Jurassic volcanic rocks.

WORK DONE: Surface diamond drilling, one hole totalling 250 feet on Joy 5.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 134 (RIP, JOCK).

CEDAR (*Fig. D, No. 22*)

LOCATION: Lat. 52° 35′ Long. 121° 30′ (93A/12E, 11W)
CARIBOO M.D. Three miles east-southeast of Likely, at the headwaters of Grogan Creek.

CLAIMS: CEDAR 1 to 34.

OWNER: JOHN M. McANDREW, 212, 14840 – 105th Avenue, Surrey.

WORK DONE: Approximately 7 miles of linecutting.

REFERENCES: Assessment Reports 2606, 4656.

BJ, CARIBOO-BELL (93A-8) (Fig. D, No. 23)

LOCATION: Lat. 52° 30′ Long. 121° 35′ (93A/12E)
CARIBOO M.D. Five miles southwest of Likely, on Mount Polley, at approximately 3,900 feet elevation.

CLAIMS: BOOTJACK 1 and 2 Fractions, BJ 1 to 60, 63 to 132, 141 to 168, GREEN 57 to 74, RED 1 to 56, RED 1 to 4 Fractions, BLUE 77 to 100.

OWNER: CARIBOO-BELL COPPER MINES LIMITED, 700, 1177 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Pyrite, chalcopyrite, and magnetite mineralization is localized within breccia zones in the Mount Polley microdiorite stock.

WORK DONE: Percussion drilling, five holes totalling 1,200 feet on BJ 5 and Bootjack 1 Fraction.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 332.

B (93A-66) (Fig. D, No. 21)

LOCATION: Lat. 52° 33′ Long. 121° 43′ (93A/12E)
CARIBOO M.D. Nine miles west-southwest of Likely, on the northeast slope of Mount Jacobie.

CLAIMS: B 1 to 80.

OWNER: Marion R. Bumgarner.

OPERATOR: SUNSHINE VALLEY MINERALS INC., Box 327, Manson, Washington 98831.

METAL: Copper.

DESCRIPTION: The area is underlain by amygdaloidal flows, lesser volcanic breccias, and minor agglomerate, which are cut by dykes of altered quartz-feldspar porphyry. Native copper, malachite, and chalcocite occur sparingly in the larger amygdules, and native copper occurs in one place in fractures in a thin tuff interbed.

WORK DONE: Surface geological mapping, 1 inch equals one-quarter mile covering parts of B 1-80.

REFERENCES: Assessment Reports 885, 4683.

MARY, BELL (93A-18) (Fig. D, No. 140)

LOCATION: Lat. 52° 40′ Long. 121° 50′ (93A/12W)
CARIBOO M.D. Twelve miles west of Likely.

CLAIMS: MARY 1 to 34, BELL 1 to 6.

OWNER: LEEMAC MINES LTD., 210, 890 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION: The property is mostly covered by glacial deposits of recent alluvium, gravel, silt, and clay of Pleistocene to Recent age. Scarce outcrops mostly of andesitic volcanic rock are believed to be of green pyroxene-bearing andesite, agglomerate, breccia, and minor tuff. Monzonite is the next predominant rock type in outcrops. The monzonite is fairly coarse grained, light brown, and rich in K-feldspar. Structure in this area is characterized by northwesterly trends. Monzonitic rock outcrops carry azurite and malachite. Mineralization is patchy and discontinuous.

WORK DONE: Surface diamond drilling, one hole totalling 500 feet on Mary 8.

CARIBOO-HUDSON (93A-71) (Fig. D, No. 98)

LOCATION: Lat. 52° 50′ Long. 121° 20′ (93A/14W)
CARIBOO M.D. At the headwaters of Cunningham Creek, at approximately 5,000 feet elevation.

CLAIMS: Mineral Lease M-32 – CUNNINGHAM 1 to 3, CUNNINGHAM EXTENSION 1 and 2, SIDEWINDER 1 to 3, SIDEWINDER Fraction, BLACK MARTIN 2, 1, 3, 4, BLACK MARTIN Fraction, HUDSON, GLEN ECHO, FOURTH OF JULY, SHASTA, SHASTA 2, CUTLER 1 and 2, RAD Fraction (Lots 5905 to 5918, 9816 to 9821, 10596 to 10598).

OWNER: Guy B. Allen.

OPERATORS: TVI MINING LTD. and ATHABASCA COLUMBIA MINING LTD., 501, 315 Eighth Avenue SW., Calgary, Alta.

METALS: Gold, tungsten, silver, lead, zinc.

DESCRIPTION: Metamorphosed sedimentary rocks of the Snowshoe Formation have been cut by the Copper Creek fault near minor basic intrusions. Mineralization includes gold in quartz veins, scheelite and gold in shear zones, and silver-lead-zinc veins.

WORK DONE: EM 16 and magnetometer surveys, 20 line-miles each; geochemical soil survey, 296 samples; claims surveyed; topography mapped, 1 inch equals 300 feet; grid flagged and surveyed covering Mineral Lease M-32.

REFERENCE: *Minister of Mines, B.C.,* Ann. Rept., 1953, pp. 96, 97.

VIC (93A-70) (Fig. D, No. 97)

LOCATION: Lat. 52° 56′-57′ Long. 121° 21′-22′ (93A/14W)
CARIBOO M.D. Cunningham Creek, Nugget Mountain, at approximately 4,000 feet elevation.

(93A/14W)

CLAIMS: VIC 9 to 16, V 1 to 8.

OWNER: W. CHAPUT & ASSOCIATES, Lumby.

METALS: Lead, zinc, silver, copper.

DESCRIPTION: Sparse sphalerite and galena, with minor chalcopyrite associated with pyrite, occur in shear zones in limy phyllites and argillites of the Midas Formation.

WORK DONE: EM survey covering Vic 9, 11, and 13; surface diamond drilling, one hole totalling 50 feet on Vic 11; road construction, approximately 2 miles on Vic 9, 11, 13, 15 and V 1-5, 7.

ED (SPITFIRE) (93A-54) (Fig. D, No. 141)

LOCATION: Lat. 52° 59' Long. 121° 25' (93A/14W)
CARIBOO M.D. Sixteen miles southeast of Wells, on Wolfe Creek.

CLAIMS: ED 285 to 294, 299, 300, 393 to 400.

OWNER: GERALD KIRWAN, 1340 Cammeray, West Vancouver.

METAL: Gold.

DESCRIPTION: Drilling intersected metasedimentary rocks of the Cariboo Group.

WORK DONE: Five vertical holes totalling 507 feet; packsack drill holes ranged in depth from 82 to 132 feet.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1946, p. 94; Assessment Report 4861.

GISCO, PARK, PITTMAN (93A-52, 53, 55-57, 60) (Fig. D, No. 26)

LOCATION: Lat. 52° 56' Long. 121° 21' (93A/14W)
CARIBOO M.D. Eight miles south of Barkerville, at the junction of Nugget Gulch and Antler Creek, between 2,600 and 3,500 feet elevation.

CLAIMS: BON, PARK, BASE METAL, ROUNDTOP, RT, TAB, SILVER MT., totalling approximately 120.

OWNER: COAST INTERIOR VENTURES LTD., 2801 – 18th Avenue, Vernon.

METALS: Silver, gold, tungsten, lead, copper, zinc.

DESCRIPTION: The claims are underlain by phyllite and intercalated limestone and quartzite of the Snowshoe Formation. On Bon 65 the Gisco quartz vein carries pyrite and galena, and on Bon 63 the Pittman occurrence comprises replacement by pyrite, galena, and sphalerite.

WORK DONE: Geochemical soil survey, 463 samples taken at 100 by 400-foot grid spacing covering Bon 52, 53, and 58-65; time-domain IP, vertical-loop EM, VLF EM, and magnetometer survey, 4.2 line-miles on three separate grids covering Bon 3-6, 13, 19, Park 5, 6, and Roundtop 1, 3, 10, 27, 28, 43, 44; surface diamond drilling, 15 holes totalling 2,211 feet on RT 3, Roundtop 43, and Park 5 and 11; surface workings mapped; 3 miles of caterpillar road constructed; trenching, approximately 1,000 feet on RT 43, 44 and Roundtop 1, 3; stripping, 13,500 feet on Bon 1 and Park 5, 11.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 333 (PARK); Assessment Reports 3521, 4587, 4642.

MB (93A-68) (Fig. D, No. 27)

LOCATION: Lat. 52° 56' Long. 121° 02' (93A/14E)
CARIBOO M.D. About 80 miles east of Quesnel, 2 miles northeast of Mount Kimball, at approximately 5,000 feet elevation.

CLAIMS: MB 3 and 4.

OWNER: Arthur T. Rivers.

OPERATOR: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METALS: Silver, gold, lead.

DESCRIPTION: Argentiferous galena occurs in quartz-carbonate veins which cut the Cunningham limestone and Yankee Belle quartz members of the Cambrian Cariboo Group.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; linecutting, 3.6 miles of grid; geochemical soil survey, 195 samples taken at 100 by 200-foot grid spacing.

REFERENCE: Assessment Report 4752.

HL, ZL (Fig. D, No. 30)

LOCATION: Lat. 52° 43' Long. 121° 32' (93A/15W)
CARIBOO M.D. Two and one-half miles northwest of Maeford Lake, west of the north arm of Quesnel Lake.

CLAIMS: HL 1 to 24, ZL 1 to 24, LAM 1 to 8.

OWNER: CREAM SILVER MINES LTD., 9th Floor, 850 West Hastings Street, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: The claims are underlain by Cunningham limestone, which is overlain by Yankee Belle phyllite along south edge of claims and is intruded by a small granitic stock north of the claims. Galena-sphalerite veins are scattered through the limestone.

WORK DONE: Reconnaissance geological mapping; geochemical soil survey, 143 samples taken on 200 by 400-foot grid spacing covering Lam 1-8.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 333; Assessment Report 4458.

SIL (93A-62) (Fig. D, No. 31)

LOCATION: Lat. 52° 48' Long. 120° 51' (93A/15W)
CARIBOO M.D. Fourteen miles west of Maeford Lake, near Quesnel Lake, at approximately 6,000 feet elevation.

CLAIMS: SIL 1 to 28, WART 1 and 2, LS 1 to 30, JO 1 to 31.

OWNER: Canadian Superior Exploration Limited (reverted to C. Gunn of Williams Lake).

OPERATOR: CANADIAN SUPERIOR EXPLORATION LIMITED, 465 Victoria Street, Kamloops.

METALS: Lead, zinc.

(93B/8W)

DESCRIPTION: Galena and sphalerite were found in Lower Cambrian limestone and phyllite.

WORK DONE: Surface diamond drilling, three holes totalling 1,157 feet on Sil 13, Wart 1, and Jo 9.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 334.

QUESNEL 93B

WED (Fig. D, No. 7)

LOCATION: Lat. 52° 26.5′ Long. 122° 16′ (93B/8W)
CARIBOO M.D. Thirty miles north of Williams Lake, 2.5 miles north-northeast of McLeese Lake Post Office.

CLAIMS: WED 1 to 21.

OWNER: HORSESHOE MINES LTD., 1555 Franklin, Vancouver.

DESCRIPTION: The claims are underlain by granodiorite of the Granite Mountain pluton.

WORK DONE: 1972 – surface geological mapping, 1 inch equals 400 feet.

REFERENCE: Assessment Report 4285.

BJ (93B-9) (Fig. D, No. 33)

LOCATION: Lat. 52° 25′ Long. 122° 13′ (93B/8E)
CARIBOO M.D. Four miles east-southeast of McLeese Lake, near the headwaters of two small lakes, at approximately 3,350 feet elevation.

CLAIMS: BJ 19, 21, 33 to 48, 53 to 66.

OWNER: MT. HYLAND MINES LTD., 25, 425 Howe Street, Vancouver.

METAL: Copper.

DESCRIPTION: Sporadic pyrite and chalcopyrite are found in quartz stockwork localized with apophyses of the Granite Mountain quartz diorite pluton. The stock has intruded greenstone and sedimentary rocks of the Cache Creek Group.

WORK DONE: Percussion drilling, three holes totalling 650 feet on BJ 40, 45, and 60; stripping, 1,384 cubic yards on BJ 35, 37, 40, 43, 54, and 60.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 175.

GR (93B-17) (Fig. D, No. 143)

LOCATION: Lat. 52° 30′ Long. 122° 09′ (93B/9E, 8E)
CARIBOO M.D. Five miles southwest of Skelton Lake, at approximately 4,500 feet elevation.

CLAIMS: GR 1 to 20, TGV 9, 10, 19 to 26, 35 to 49, 50 to 52.

OWNER: NEWVAN RESOURCES LTD., 211, 850 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

(93B/9E)

DESCRIPTION: Chalcopyrite and molybdenite occur in both Cache Creek and Guichon Creek batholith rocks.

WORK DONE: IP survey, 25.6 line-miles covering TGV 9, 10, 19, 26, 35, 52; percussion drilling, 14 holes totalling 2,500 feet on GR 1-20 and 12 holes totalling approximately 3,000 feet on TGV 37, 38, 41, 43, 44, 49; road construction, 30 miles (to drill sites); trenching, 200 feet on GR 1-20.

GM, BM (93B-2) (Fig. D, No. 11)

LOCATION: Lat. 52° 32' Long. 122° 13' (93B/9E)
CARIBOO M.D. Eight miles north 25 degrees east of McLeese Lake.

CLAIMS: GM 21 to 28, 41 to 46, BM 1 to 4, STRIKE 1, SANDIE 1 to 6 Fractions.

OWNERS: Exeter Mines Limited, C. Gunn, and Helene Gunn.

OPERATOR: EXETER MINES LIMITED, 211, 850 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: The area is underlain by quartz diorite of the Granite Mountain stock, which locally carried pyrite and chalcopyrite in northwesterly trending shear zones and quartz veins.

WORK DONE: Geochemical soil survey, 920 samples taken on 100 by 400-foot grid spacing; 21 miles of linecutting covering all claims.

REFERENCES: Assessment Reports 597, 4506.

AXEL (93B-20) (Fig. D, No. 34)

LOCATION: Lat. 52° 32' Long. 122° 20.5' (93B/9W)
CARIBOO M.D. Four miles northeast of Marguerite and 2 miles north of Cuisson Lake, at approximately 2,800 feet elevation.

CLAIMS: AXEL 3 to 6, 8, 10, 12, 23 to 26, AXEL 2 and 16 Fractions, MAX 1, 2, 5 to 8, 8, 9, 13, 14, REX 1 to 7 Fractions, DEER 1 to 4, JIB 35 to 38, MOOSE 1 and 2, PET 1 to 4, HEM 37 and 38.

OWNER: AXEL MINES LTD., 700, 1177 West Hastings Street, Vancouver V6E 2K5.

METAL: Copper.

DESCRIPTION: The area is underlain by Cache Creek volcanic rocks which have been intruded by a Jurassic quartz diorite pluton, and partly obscured by overlying Tertiary lava. Pyrite and minor chalcopyrite occur as disseminations in the pluton, and minor cupriferous skarn has been observed at the quartz diorite-country rock contact.

WORK DONE: Percussion drilling, five holes totalling 1,300 feet on Axel 10, Jib 38, Rex 2 Fraction, and Rex 4 Fraction.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 337.

GIBRALTAR MINE (93B-12, 13) (Fig. D, No. 99)

By A. Sutherland Brown

LOCATION: Lat. 52° 31′ Long. 122° 17′ (93B/9W)
CARIBOO M.D. Twelve miles north of McLeese Lake, on the western slopes of Granite Mountain, between 3,000 and 4,000 feet elevation.

CLAIMS: PAN, ZEPHYR, GG, etc., totalling approximately 400.

OWNER: GIBRALTAR MINES LTD., which is a subsidiary held 71 per cent by Canex Placer Limited, 700, 1030 West Georgia Street, Vancouver; mine address, Box 130, McLeese Lake.

METALS: Copper, molybdenum (production shown on Table I).

DESCRIPTION:

INTRODUCTION: The Gibraltar mine is a porphyry copper-molybdenum deposit with unusual characteristics. During the early intensive exploration period at the property, only a few geologists, of whom the writer was not one, thought of it as a porphyry deposit. Visiting European geologists are still quick to suggest it represents a stratiform deposit that has been metamorphosed so that it now has a gneissic fabric. Nevertheless, it is now widely thought of as a porphyry deposit with a difference, and the more one learns about it, the more compelling is such a definition.

The writer would classify Gibraltar as a plutonic porphyry deposit. It thus can be compared with similar deposits, such as the deeper deposits of the Highland Valley, that is, Lornex and Valley Copper, or with Brenda and Endako. All these have the following characteristics: they occur within medium-sized, zoned plutons composed mainly of granitic textured rocks with sparse truly porphyritic phases; they have regular vein sets including some large veins; and they lack breccia bodies. A major difference between Gibraltar and these other examples is that, in the former, deformation and metamorphism form part of the continuum between intrusion and mineralization.

HISTORY: The Gibraltar mine completed its first full year of production in 1973, culminating a long period of intermittent investigation and six years of intensive exploration and development. The earliest record of prospecting on Granite Mountain is in 1917 when Joseph Briand and partners worked on quartz veins carrying secondary copper mineralization on what was then called the Rainbow group and later known as the Pollyanna showings (*Minister of Mines, B.C.,* Ann. Rept., 1917, pp. 133, 134). Prospecting on Granite Mountain and vicinity continued through the 1920's and by 1925, mineral showings were prospected on the Gibraltar West zone, then called Arctic and Laughing Water (*Minister of Mines, B.C.,* Ann. Rept., 1925, pp. 155, 156). The persistence of prospecting in view of the sparse outcrop, extensive oxidation and leaching, low primary copper grade, and dearth of precious metals was remarkable, but it tapered off toward the end of the decade and was not seriously renewed until 1949. At that time, C. E. Johnson and R. R. Moffat located claims covering both the Pollyanna and Gibraltar West zones, but they worked primarily on the former which they called the Copper King and made a half-ton ore shipment to the Tacoma smelter (*Minister of Mines, B.C.,* Ann. Rept., 1950, pp. 106, 107). Activity on the Pollyanna then lapsed. Later an adit was driven on the West Gibraltar zone (Sunset adit) in 1957 by E. Kinder, T. Matier, and R. L. Clothier (*Minister of Mines, B.C.,* Ann. Rept., 1957, p. 17). Claims covering the adit were allowed to lapse, but were relocated in 1962 by J. Hilton who optioned them to

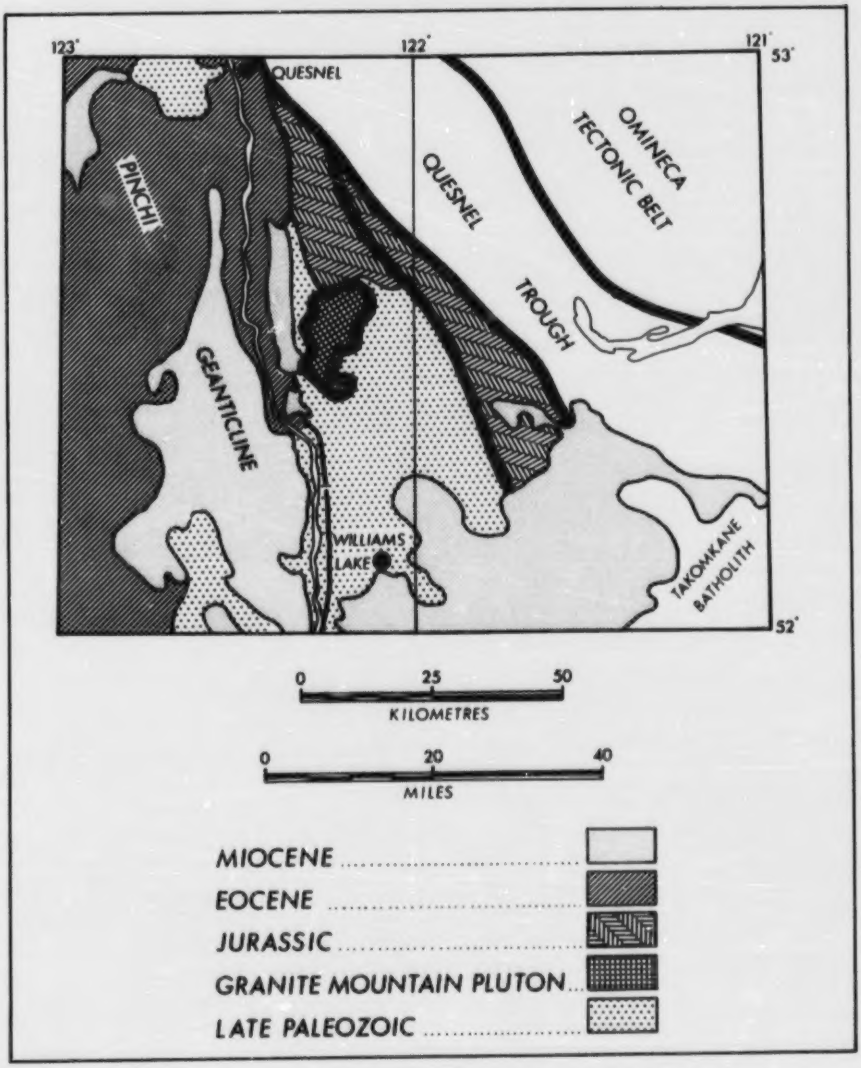

123°
122°
121°
53°
52°
QUESNEL
PINCHI
GEANTICLINE
WILLIAMS LAKE
QUESNEL TROUGH
OMINECA TECTONIC BELT
TAKOMKANE BATHOLITH
0
25
50
KILOMETRES
0
20
40
MILES
MIOCENE
EOCENE
JURASSIC
GRANITE MOUNTAIN PLUTON
LATE PALEOZOIC

Figure 21. Tectonic sketch map of Central Cariboo.

what was then a minor company, Gibraltar Mines Ltd. In the same year, Keevil Mining Group Limited started the sequence of modern exploration with extensive geochemical and geophysical surveys over Granite Mountain. Recognition of a leached capping at the Pollyanna by Bill Kerns of Duval Corporation of Canada in 1965 led to that company optioning the property and conducting induced polarization geophysical surveys and drilling 13 NQ core holes prior to their starting a joint venture with Canex Placer Limited (Canex Aerial Exploration Ltd.) in 1967. In the same interval, Gibraltar initiated geochemical and induced polarization surveys and drilling in the West Gibraltar zone. Cominco Ltd. optioned the property in 1966, and that year and in 1967 with Mitsubishi Metal Mining Co. Ltd. explored this area quite thoroughly. At this stage a mineralized zone of modest size was established in the West Gibraltar zone and a larger low-grade body evident at the Pollyanna, but the results were insufficient for Cominco to continue its option and for Duval to continue its share in the joint venture. Later, in 1969, Gibraltar Mines Ltd. drilled a hole into the covered East Gibraltar zone and established the existence of a chalcocite-enriched zone as well as a new mineralized zone. Canex then optioned the Gibraltar property and discovered the hidden Granite Lake zone the same year. Exploration and evaluation followed rapidly and Gibraltar was put into production early in 1972.

PRODUCTION AND ORE RESERVES: The company stated in its 1972 Annual Report that on 31st December, ore reserves with a stripping ratio of 2.15 to 1 and an average cutoff grade of 0.25 per cent were:

Zone	Tons	Copper *per cent*	
Gibraltar East	137,000,000	0.372	
Granite Lake	120,000,000	0.373	
Pollyanna	81,000,000	0.360	
Gibraltar West	9,000,000	0.400	
Total	347,000,000	0.371	(plus 0.016 per cent MoS_2)

Not included in this total is 14,000,000 tons of ore that forms part of the Granite Lake body, but is held jointly by Cuisson Lake Mines Ltd. and Gunn Mines Ltd.

During 1972 and 1973, mine production was entirely from the Gibraltar East pit and was as follows: 1972 – 10,861,500 tons milled containing 132,100 tons of copper concentrates; 1973 – 15,082,233 tons milled containing 212,383 tons of copper concentrates and 412 tons of molybdenite concentrates.

GEOLOGY

REGIONAL SETTING: Perception of the precise nature of the setting of Gibraltar mine is obscured by abundant glacial drift, alluvium, and Miocene plateau basalts. Figure 21 shows that the Granite Mountain pluton, within which the Gibraltar mine occurs, is situated near the boundary between two major longitudinal elements of the Intermontane Tectonic Belt, that is, the Pinchi geanticline and the Quesnel trough. Although most of the contact of the pluton with its host rocks is covered, it is evident that the body is

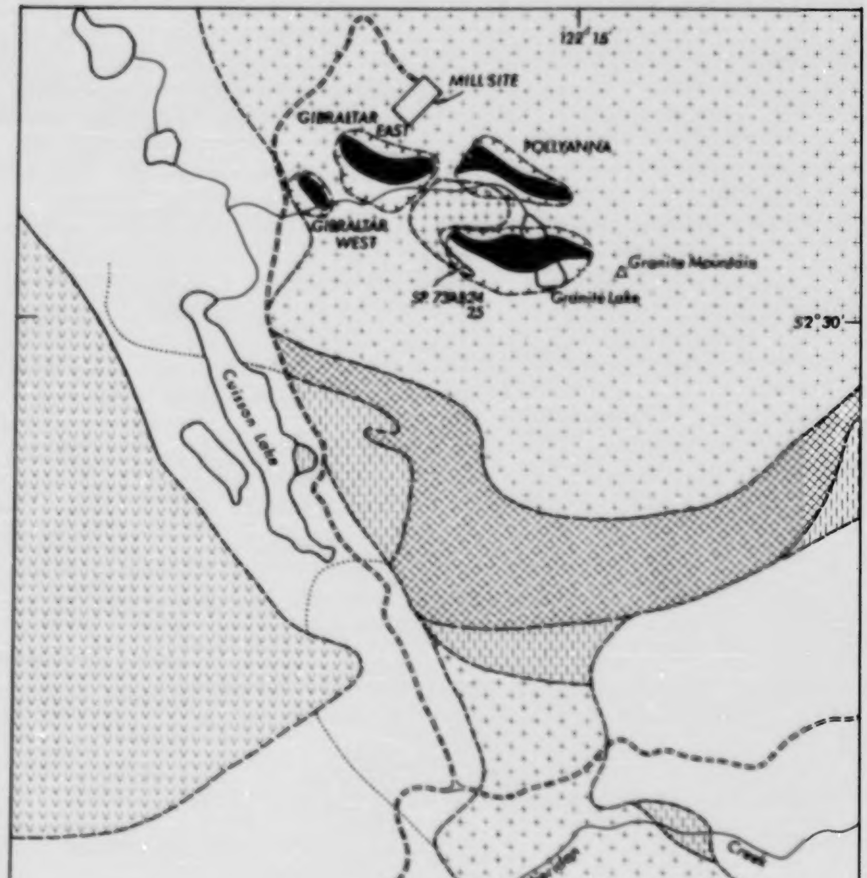

122°15'
MILL SITE
GIBRALTAR EAST
POLLYANNA
GIBRALTAR WEST
Granite Mountain
SP 73AB24
25
Granite Lake
52°30'
Cuisson Lake
Sheridan Creek
97
McLeese Lake
DEEP ALLUVIUM
MIOCENE BASALT
GRANITE MOUNTAIN PLUTON
LEUCOCRATIC PHASE
MAIN PHASE
MAFIC PHASE
CACHE CREEK GROUP
IN PART METAMORPHOSED
PROJECTED PIT OUTLINE AND UPPER SURFACE OF OREBODY
CONTACTS PROJECTED UNDER ALLUVIUM
0
1
2
MILES
0
1
2
3
KILOMETRES

Figure 22. Geological sketch, southern Granite Mountain pluton.

surrounded by rocks mapped as Cache Creek Group which form the northern extension of a belt stretching southward to the type locality. In the McLeese Lake area, the group consists of basic volcanic flows and clastic rocks, cherts, argillites, and minor limestones. Adjacent to the pluton these may be transformed to greenschists or to skarny limestone. In this area then, the Cache Creek Group forms a characteristic component of the Pinchi geanticline. In contrast, to the east the Quesnel trough is characterized by Triassic volcanic rocks and flaggy limestone but also contains younger Mesozoic volcanic and clastic rocks. A major fault bordering the Triassic components of the trough strikes northwestward about 10 miles east of the Granite Mountain pluton. Jurassic volcanic and sedimentary rocks occur to the west of the main fault-bounded trough in a belt that may also be bordered on the west by a fault, but these rocks also overlap Cache Creek Group and probably the pluton on the Pinchi geanticline further west. The basal conglomerates of the Lower Jurassic sequence on Dragon Mountain contain granitic cobbles petrographically similar to rocks comprising the Granite Mountain pluton. A Triassic date recently obtained from Granite Mountain rocks is consistent with such an interpretation. Hence the Granite Mountain pluton is thought to be related to the coeval volcanic rocks of the adjacent Quesnel trough.

The Late Mesozoic and earliest Tertiary appear to have been times of erosion of the area of Figure 21, but in the Eocene epoch acidic and basic volcanic rocks and some sedimentary rocks accumulated. These units now outcrop west of McLeese Lake and are tilted and faulted. Their eastern boundary appears to coincide with a major northerly striking fault zone followed by the Fraser River. The youngest rocks of the area are Miocene olivine basalt flows that cap the plateaus both sides of the Fraser River. These flood basalts are flat lying and appear to be unfaulted. They form buttes west of Cuisson and McLeese Lakes and diamond-drill core shows that they also fill the valley of Cuisson Lake to a depth of about 300 feet overlying Granite Mountain plutonic rocks.

GRANITE MOUNTAIN PLUTON: The Granite Mountain pluton is a tadpole-shaped pluton about 13 by 7 miles in plan and is characterized by a variably intense foliation striking transverse to its long north-south orientation. The pluton consists of a number of poorly defined phases (Fig. 22). Transitions between the phases are generally gradational over significant distances and this together with a superimposed deformation and metamorphism makes distinguishing and mapping the units difficult. A mafic phase is found along the southern boundary of the main mass of the pluton adjacent to the metavolcanic wallrocks. Similar mafic-rich rocks occur within the pluton in minor amounts where they appear to be large inclusions. A quartzose, leucocratic phase is found toward the centre of the main mass and this has poorly defined limits. It is associated with quartz feldspar porphyry and related aplite dykes, both of which are rarer elsewhere. The narrow southern extension of the pluton across Sheridan Creek is formed of relatively undeformed rocks that appear to be similar to the least deformed and altered rocks of the main phase.

PETROLOGY

Main Phase: The petrology, chemistry, and radiometric age of the Granite Mountain pluton described here has been based primarily on two specimens collected near the projected western rim of the Granite Lake pit (Fig. 22). These specimens, collected about

100 feet apart, are from a small area of the freshest and least deformed rock seen within the pluton, which is a zone of transition between the main phase and a relatively leucocratic variety. Beyond this small area, the character of the rocks grades rapidly to that similar to most of the pluton. Specimen 73-AB-24 is representative of the main phase and 73-AB-25 is relatively leucocratic. Table 1 shows chemical analyses for these two specimens as well as Nockolds' (1954) average tonalite (quartz diorite) and granodiorite. A comparison indicates that the specimens are between Nockolds' averages and probably closest to granodiorite. Table 2 shows estimates, guided by charts, made of the modes of these two specimens. According to the classification recommended by the International Union of Geological Sciences Commission on Systematics in Petrology (Streckeisen, 1973), these rocks would likewise be on the division between tonalite (quartz diorite) and granodiorite.

TABLE 1 – CHEMICAL ANALYSES, GRANITE MOUNTAIN PLUTON

	1 73–AB–24	2 73–AB–25	3 Average Quartz Diorite	4 Average Granodiorite
SiO_2	68.0	70.5	66.15	66.88
Al_2O_3	15.16	14.75	15.56	15.66
MgO	1.51	1.39	1.94	1.57
CaO	3.99	3.03	4.65	3.56
Na_2O	3.93	4.02	3.90	3.84
K_2O	1.99	2.38	1.42	3.07
TiO_2	0.45	0.37	0.62	0.57
MnO	0.076	0.075	0.08	0.07
FeO	1.76	1.54	3.42	2.59
Fe_2O_3	1.91	1.61	1.36	1.33
H_2O+	1.24	1.00	0.69	0.65
H_2O-	0.16	0.04	-----	-----
CO_2	0.07	0.055	-----	-----
P_2O_5	0.18	0.18	0.21	0.21
S	0.01	0.01	-----	-----

1 – Main phase, Granite Mountain pluton, from 2,000 feet west of Granite Lake. Analysis by P. F. Ralph, Analytical Laboratory, British Columbia Department of Mines and Petroleum Resources.

2 – Transitional leucocratic phase, Granite Mountain pluton, 100 feet northwest of 73–AB–24. Analysis by P. F. Ralph, Analytical Laboratory, British Columbia Department of Mines and Petroleum Resources.

3 – Nockolds' average tonalite (quartz diorite).

4 – Nockolds' average granodiorite.

TABLE 2 – ESTIMATED MODAL COMPOSITIONS, GRANITE MOUNTAIN PLUTON

	Mafic Phase	Main Phase 73–AB–24	Transition 73–AB–25	Leucocratic Phase	Quartz Feldspar Porphyry	Aplite
Quartz	5-10	25	25	18±	20-22.5	10*
Plagioclase (±sericite)	65	50 (An_{35})	55 (An_{35})	44±	25-27.5	22*
Alkali feldspar	?	10	10	----	----	5*
Hornblende	25-30	10	7	5±	?	----
Biotite (chlorite)		5	3			----
Opaque (pyrite, chalcopyrite, ilmenite)	----	<1	<1	----	----	----
Matrix (per cent)	----	----	----	20-35	50	60
Carbonate	----	----	----	5.5.±	2.5	3

*Microphenocrysts.

Common accessory minerals are apatite, sphene, and zircon. Opaque minerals, pyrite, chalcopyrite, and ilmenite, are quite variable, but, except in vein stockworks, are commonly much less than 1 per cent.

The main phase rocks are formed of laths of andesine (An_{35}) and hornblende crystals, both up to 5 millimetres long and aligned in a primary foliation (S_1). Books of biotite and large grains of quartz complete the framework between which small grains of alkali feldspar and quartz occur. The plagioclase is clouded by sericite and clinozoisite alteration and is unzoned except for clear thin rims of albite. The alkali feldspar exhibits patchy twinning characteristic of some perthite and appears to consist of albite and orthoclase. X-ray diffraction results prove the presence of the latter. Biotite has been slightly to entirely altered to chlorite. Accessory minerals include sphene, apatite, and zircon, and the former two form some crystals 1 millimetre or more in length.

Mafic Phases: The mafic phase is more variable in composition and texture than the main phase, and if it is assumed to be analogous to the Hybrid phase of the Guichon Creek batholith, may represent variable contamination by volcanic wallrocks of the main magma. Among the mafic phases, two rock types are prominent: diorite very similar to the main granodiorite but containing 25 to 35 per cent mafic minerals and 5 to 10 per cent quartz, and generally fine-grained rock of similar overall composition but with patchy variation in grain size.

Leucocratic Phases: Leucocratic phases include both rocks which are leucocratic in original composition and others that resemble them superficially because the mafic minerals have been destroyed. Truly leucocratic rocks appear to be common northwest of Granite Lake, in the area between the three main ore deposits (Fig. 22). This relationship led Drummond (1972) to propose a quartz-rich core zone. Unfortunately, this zone is sparse in outcrop and drill holes are widely spaced so that the leucocratic core cannot be outlined with assurance at present. The outline shown on Figure 22 is tentative. Within this core most of the rocks are leucocratic and quartzose, and have been cut by quartz stockwork that is commonly barren of primary sulphides. Some main phase is intercalated with the leucocratic phase and is cut by extensive barren quartz stockwork. The contacts between the leucocratic and main phase appear to be parallel to the foliation which is abnormally flat in the central part of the core zone. Some of the drill holes in the central core show not only much quartz feldspar porphyry but also gradations between this type and truly leucocratic granodiorite. Other contacts between these two types are sharp and seemingly intrusive. The quartz feldspar porphyry in turn grades into aplite that constitutes one of the few dyke types present in the area. Hence, there is an apparently complete gradation from leucocratic granodiorite of the central core to quartz feldspar porphyry and outward to thin aplite dykes. This transition in space is evident also petrologically. The leucocratic variety has a semi-porphyritic nature with a framework of chunky plagioclase up to 5 millimetres long and equant grains of quartz and rare masses of chlorite after biotite or hornblende crystals of about the same size. A sparse matrix consists of aplitic fine quartz, plagioclase, and alkali feldspar. Alteration minerals commonly include much sericite, particularly at plagioclase grain boundaries and fractures, poikiloblastic carbonate grains in matrix, and clinozoisite disseminated in plagioclase and chlorite. The quartz feldspar porphyry is similar in texture but matrix forms about half the volume so the phenocrysts are floating. Mafic minerals in the porphyry are virtually absent and quartz forms about 40 per cent of the rock. The aplite is similar to the matrix of the leucocratic phase and quartz feldspar porphyry and commonly contains some phenocrysts or micro-phenocrysts of quartz and feldspar.

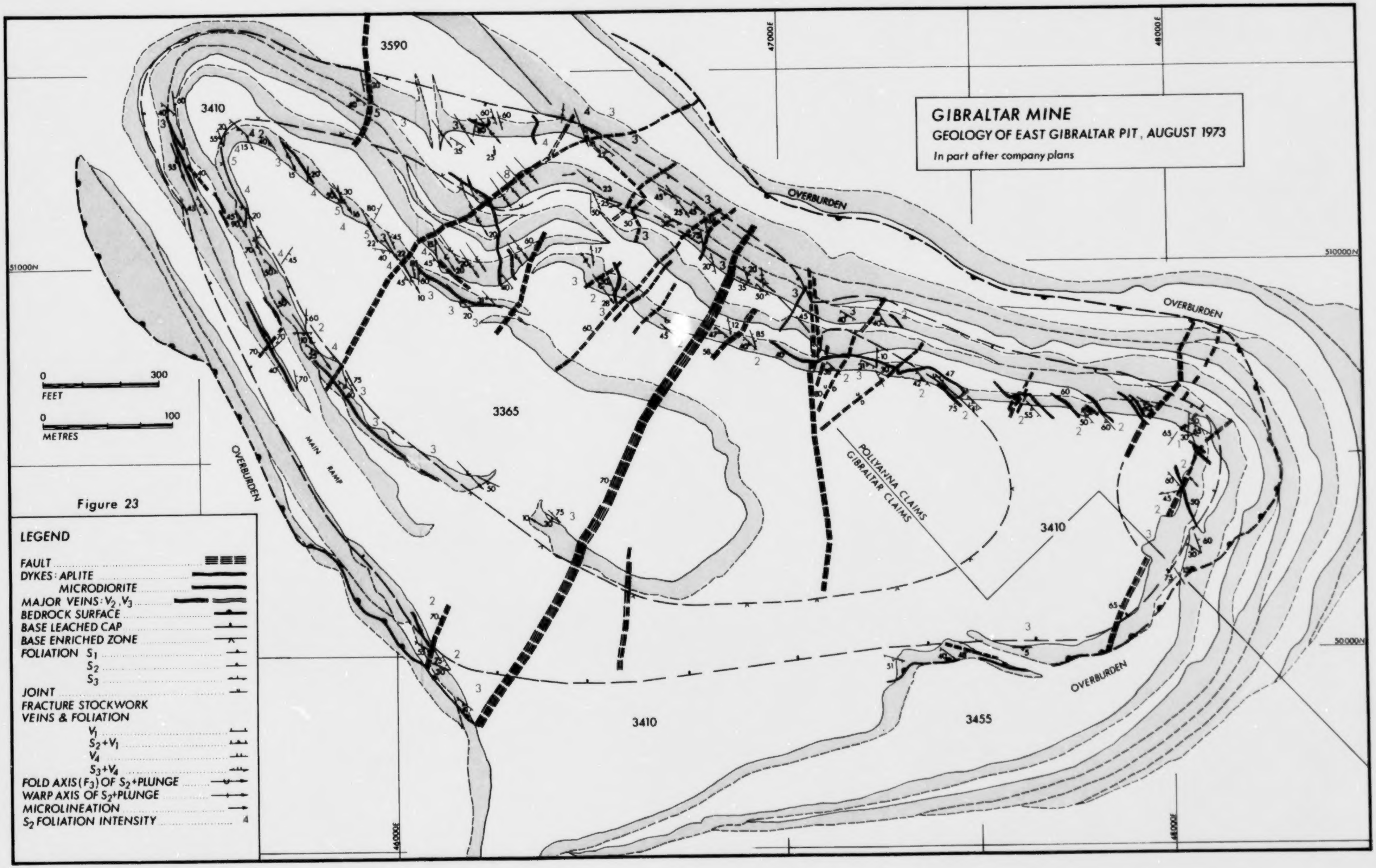


Figure 23

GIBRALTAR MINE
GEOLOGY OF EAST GIBRALTAR PIT, AUGUST 1973
In part after company plans
LEGEND
FAULT
DYKES: APLITE
MICRODIORITE
MAJOR VEINS: V2, V3
BEDROCK SURFACE
BASE LEACHED CAP
BASE ENRICHED ZONE
FOLIATION S1
S2
S3
JOINT
FRACTURE STOCKWORK
VEINS & FOLIATION
V1
S2+V1
V4
S3+V4
FOLD AXIS (F3) OF S2+PLUNGE
WARP AXIS OF S2+PLUNGE
MICROLINEATION
S2 FOLIATION INTENSITY 4
0 300 FEET
0 100 METRES
3590
3410
3365
3455
OVERBURDEN
MAIN RAMP
POLLYANNA CLAIMS
GIBRALTAR CLAIMS
47000E
48000E
46000E
51000N
510000N
50000N

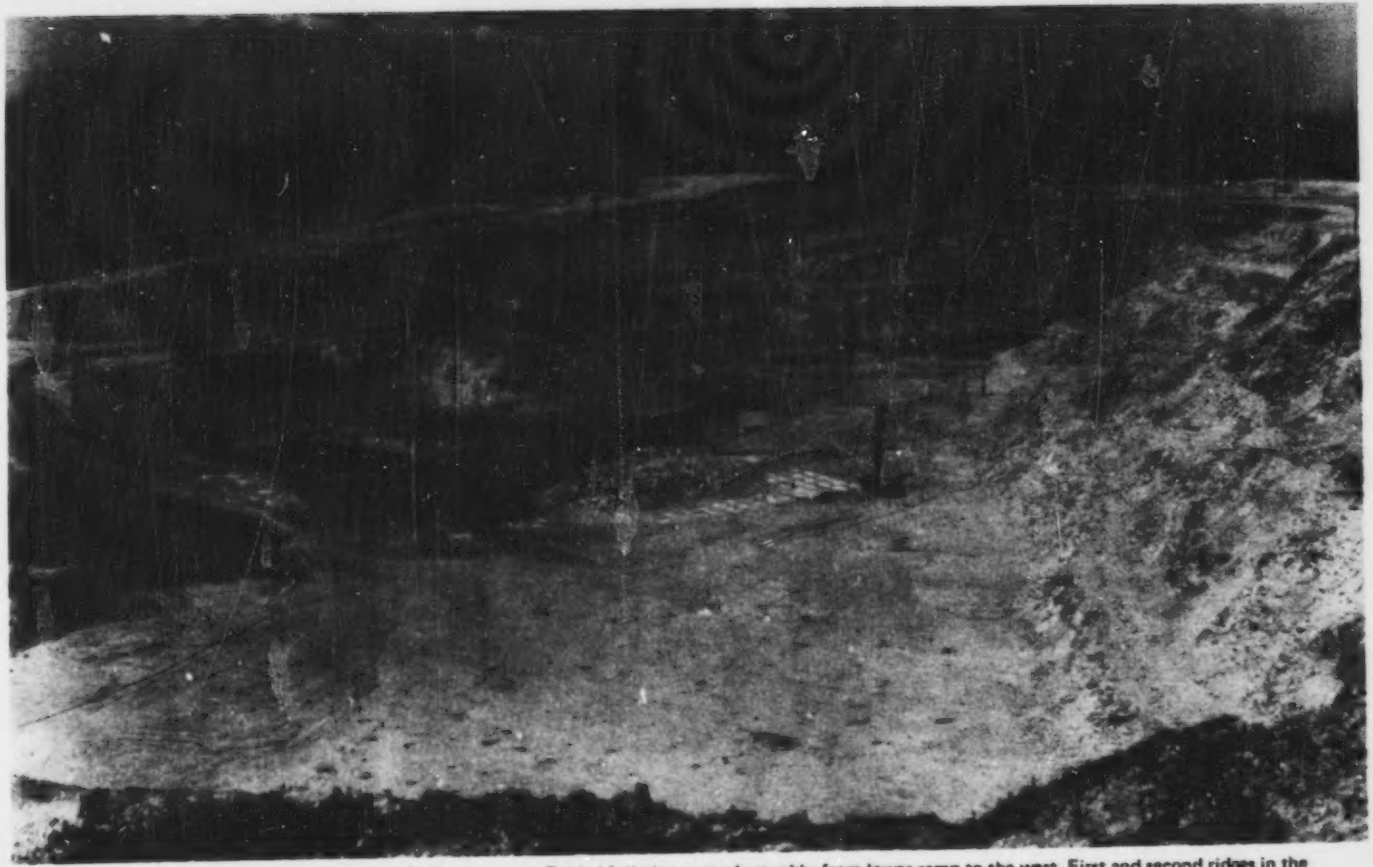


Plate IV. Gibraltar East pit, August 1973, view west. Folded foliation extends roughly from lower ramp to the west. First and second ridges in the distance are capped by Miocene plateau basalt with the Fraser River between; hills beyond formed of Eocene volcanic rocks.

Post-ore Dyke: One post-ore dyke is found in the Gibraltar East pit. It is a microdiorite dyke about 2 feet wide that strikes north 20 degrees east and dips about 75 degrees west. Microscopically, the rock has an insertal holocrystalline texture and is composed of about 60 per cent thin andesine laths, 25 per cent chlorite after hornblende, 5 per cent quartz, and 10 per cent porphyroblastic epidote.

AGE: The age of the Granite Mountain pluton indicated by stratigraphic relationships is as follows: the pluton cuts Late Paleozoic Cache Creek rocks, and boulders similar to it occur in basal conglomerates of Lower Jurassic age. Specimens 73-AB-24 and 73-AB-25 collected west of Granite Lake were the freshest found in the pluton and provided clean unaltered hornblende separates in both cases and in 73-AB-24, biotite with very minor interleaved chlorite. These separates were sent to the Department of Geological Sciences at the University of British Columbia and were analysed under the direction of J. Harakal. The results were not entirely consistent in that check analyses did not get acceptable results. Nevertheless, initial analyses on the hornblende-biotite pair gave 200 million years – a Triassic age that would seem most likely.

STRUCTURE: The Granite Mountain pluton had an original igneous foliation (S_1) striking westward and dipping steeply southward which is transverse to the long dimension of the body in plan. This foliation is only obvious macroscopically in selected locales where later deformation is minimal. West of Granite Lake, in the vicinity from which specimens 73-AB-24 and 73-AB-25 were collected, the primary foliation (S_1) is revealed by alignment of primary undeformed plagioclase and hornblende. This foliation strikes north 70 degrees west (±10 degrees) and dips 60 degrees (±5 degrees) southward. S_1 here grades imperceptibly into a subparallel second foliation (S_2) that results from penetrative deformation. Elsewhere in diverse localities, microscopic evidence is fairly commonly suggestive of an origin parallelism of S_2 to S_1. Hence the writer believes that, as S_2 is almost universally developed in the pluton in a similar orientation, it has been guided by an original igneous foliation.

In mapping the East Gibraltar pit (Fig. 23), the writer assigned arbitrary values from 1 to 5 to the intensity of foliation: F_1, the lowest order, has a noticeable orientation of mafic minerals and possibly plagioclase laths and is normally primary igneous flow foliation; F_2 has a modest foliation; F_3, pronounced foliation; F_4, intense foliation; and F_5 is, in fact, a phyllonitic schist. These macroscopic intensity values are consistently related to various microscopic textural criteria.

F_1 as described above has an alignment of large inequant grains without cataclasis.

F_2 has strained quartz with slight shattering, minor and widely spaced trains of new sericite, and mosaic recrystallized quartz. Biotite (chlorite), with cleavage close to the orientation of S_2, is distorted and drawn out.

F_3 commonly has a variable texture resulting from channeling of deformation and movement along S_2 planes between which cataclasis is substantially less. Movement planes are rarely greater than 5 millimetres apart. Between movement planes quartz is shattered and mosaic quartz common, mafic minerals converted to chlorite and substantially strung out. Feldspar is largely converted to sericite but is coherent. On movement planes feldspars are converted to trains of sericite and fine quartz; mafic minerals to trains rich in chlorite; and quartz to trains of fine mosaic quartz. Dolomite porphyroblasts are commonly present.

F_4 has a more uniform flaser-like texture, with movement planes wrapping around augen of recrystallized quartz that are commonly three times as long as thick. Plagioclase is largely destroyed or, if present, occurs as minor small grains of albite. In contrast, dolomite porphyroblasts are significant. Mafic grains have been completely transformed to chlorite-rich schlieren. In addition, kink bands forming S_3 are a common feature.

F_5 has a fairly uniform, fine schistose texture consisting of carbonate, chlorite-sericite, and quartz.

METAMORPHISM: Metamorphism of the Granite Mountain pluton is mostly related to deformation and to synchronous mineralization (*see* later). During the transformation of the plutonic rocks from F_1 to F_5, significant mineralogical changes took place that were not completely isochemical. In the process, all hornblende, biotite, and feldspar were destroyed and the proportion of other minerals changed. Quartz increased from 25 to 35 or 45 per cent, chlorite remained about the same as the original total of mafic minerals, but sericite (muscovite) became considerably less than original feldspar. The loss of feldspar was compensated by new quartz, muscovite, and carbonate (normally dolomite), but there is an apparent net loss in sodium because little can be accommodated in chlorite or muscovite, and paragonite is not present, judged by X-ray diffraction.

Specimens of the Granite Mountain pluton that are little deformed show some of the alteration that clearly relates to deformation in the more foliated specimens. Commonly all biotite and most hornblende is altered to chlorite and plagioclase is variably but fairly intensely altered to a felted mass of sericite and clinozoisite except for clear rims that appear to be albite. This metamorphism is probably synchronous with the similar but more extreme one in the foliated specimens. Adjacent to large veins (V_2 and V_3), there is commonly a pronounced sericitization that is related to the mineralization and probably also to the intense movement adjacent to these planes (*see* later). Small veinlets (V_1) parallel to the foliation also show narrow selvages of intense movement with resultant sericite and chlorite which superficially appear to be chlorite selvages.

In addition to these changes connected with deformation and mineralization, there are ones clearly later whose age is otherwise unknown. The most obvious evidence of later overprinting is replacement of sericite and muscovite of movement planes and altered plagioclase by coarse epidote not seemingly involved in the deformational process in any way.

GIBRALTAR MINE: The Gibraltar mine consists of four orebodies: the Gibraltar East, Gibraltar West, Pollyanna, and Granite Lake, which are distributed on an elliptical plan with the major axis of about 2 miles long parallel to the plutonic foliation and minor axis about 1 mile across (Fig. 22). Each orebody will be developed by separate open pits in sequence. Gibraltar East provides all the ore from start-up until mid-1974, when production of the Granite Lake pit will begin and phase 1 of the Gibraltar East will terminate.

Zoning of the primary mineralization and of plutonic rocks was demonstrated by a series of articles by Canex geologists (Rotherham, Drummond, and Tennant, 1972; Drummond, 1972; and Drummond, Tennant, and Young, 1973). The induced polarization maps put

Plate VA. Warped foliation in zone of transition between folded and unfolded parts of Gibraltar East pit, viewed up-plunge to northwest on 3545 bench.

Plate VB. Stack of sharp folds of foliation, view northwest up-plunge showing S_2 and S_3, northwest part of Gibraltar East pit (3500 bench).

together by Rotherham, *et al.*, showed maximum per cent frequency effect in a fairly complete zone peripheral to the orebodies that can be related to the distribution of the maximum amount of pyrite. Drummond (1972) and Drummond, *et al.* (1973) described the existence of a weakly mineralized and a barren core zone which coincides with a zone of leucocratic granodiorite and quartz feldspar porphyry. The central core is not well defined because of the lack of outcrop and drilling in the area and also because of the effect of intercalation of leucocratic and main phase at its periphery and possible effects of faulting (Fig. 22). In general, foliation at its centre, judged by the few drill holes available, is fairly flat which could be consistent with an interpretation of a central dome.

GIBRALTAR EAST DEPOSIT: The only orebody extensively exposed during the writer's visit in the summer of 1973 was the Gibraltar East deposit (Plate IV). The characteristics of this body and its setting are considered fairly representative but until the others are exposed, a definitive synthesis cannot be made. Figure 23 is a map of the Gibraltar East pit based on the writer's observations augmented by information on the fracture patterns from mapping by mine geologist, Peter Thompson.

The Gibraltar East pit is developed entirely in the main phase of the Granite Mountain pluton and has very minor dyke rocks, a few pre-ore aplites, and one post-ore microdiorite. In spite of this seeming simplicity, major differences exist in geological character from place to place with two features most prominent: a marked oxidized and leached cap related to the present surface; and a major difference in degree of foliation and folding of foliation in the northwestern part in contrast to the southeastern section. The latter variation in combination with the relation to the vein system enables one to form a preliminary synthesis regarding the interrelated development of the structure and vein systems.

Structure: The mutual relationship between the intensity of foliation and the development of folding is evident on Figure 23. Foliations 3, 4, and 5 are found in the northwestern part of the pit, coinciding with numerous folds. Plate VIA and Plate VB illustrate the nature of the folded foliation in this area. Followed eastward, folding decreases to gentle warps with axes oriented in the same orientation (*see* Plate VA). Further east, folding disappears and the dominant foliation is 2, with rare 1 and 3. Figure 24 is a stereoprojection of these data, from which it can be seen that S_2 averages north 48 degrees west and dips 44 degrees southwestward. The F_3 fold axes maximum is oriented south 31 degrees east, plunging 18 degrees southeastward. Considerable scatter occurs in poles to S_2 and particularly to those measured in the western folded part of the pit. However, a fairly well-developed girdle is evident, virtually normal to the plunge of the fold axes. Scatter of fold axes occurs also as a partial girdle, normal to the one containing poles to S_2. Figure 25 is a stereoprojection of S_3 among other things and shows a partial girdle of this third foliation which commonly appears to have an axial-plane relationship to folds of S_2, and the figure tends to substantiate this.

Two other features oriented parallel to the S_2 are the V_1 fracture stockwork (*see* later) and minor strike faults containing V_2 and V_3 veins. The V_1 fracture set in the pit is a closely spaced one, parallel to the S_2 foliation and folded with it. The strike faults

Plate VIA. Sharp synclinal keel in folded foliation in northwest part of Gibraltar East pit (3365 bench). Note variable intensity of foliation, dark V_1 vein folded with foliation, boudinaged white V_4 vein with chalcopyrite below coin.

Plate VIB. Foliated Granite Mountain granodiorite, western Gibraltar East pit, showing S_2 with intensity F_3 to F_4, parallel dark V_1 veins, and incipient S_3 at about 25 degrees to S_2 and V_1.

separate packets of folds of S_2 and appear to be decollement surfaces parallel to the original orientation of S_2 on which movement was channeled and which were filled by V_2 and V_3 veins before movement was completed.

The prominent faults trending north to north 30 degrees east on Figure 23 are zones of very minor movement, mostly less than 20 feet or so. They are broad fracture belts of post-ore age whose significance is mostly related to pit-wall stability and movement of groundwater. They therefore bear a relationship to the lower surface of secondary enrichment.

Vein Systems and Mineralization: The veins are readily classified into sets as previously described by Drummond (1972). The writer has simplified the many assemblages described by Drummond and related the vein sets to definite structural environments. Symbols V_1 to V_4 are used in the following discussion for the various vein sets from oldest (V_1) to youngest (V_4).

V_1 is the earliest vein that is almost invariably developed in a fracture stockwork parallel to S_2. The veinlets are small, normally only 1 to 2 millimetres wide, but may be very continuous, parallel, and separated by only 3 to 5 centimetres (see Plate VIB and Plate VII). They are composed principally of quartz and pyrite with chalcopyrite, but within within the ore zone chalcopyrite may become dominant. Pyrite is well crystallized as cubes but may be elongate. Chalcopyrite is commonly peripheral to pyrite in amoeboid forms. Sericite and chlorite may be present in the vein and are characteristic of the selvages which commonly have the fabric of planes of intense movement. The chlorite gives the envelopes a dark colour. Rarely veins in the V_1 orientation contain magnetite and epidote. In areas of very intense deformation, the V_1 veinlets may only be apparent as trains of pyrite (and chalcopyrite) in quartz, muscovite, and chlorite schist.

V_2 and V_3 are major veins developed parallel to the average orientation of S_2, hence parallel to V_1 or the original orientation of V_1. They differ from one another mainly in mineralogy but there is also some evidence that V_3 is the younger. Veins of both sets may be 1 foot (30 centimetres) or thicker and are traceable for 500 feet (150 metres) or more along strike. Both commonly have marked sericite envelopes and similar structural position – normally oriented in minor strike faults parallel to S_2 or the original orientation of S_2.

These faults appear to be surfaces on which decollement took place during folding of S_2. V_2 is characterized by massive quartz with significant pyrite and chalcopyrite that may occur in large nests, but with no chlorite blebs (see Plate VII). They may be drusy in a minor way. V_3 is very similar but is characterized in addition by ribbon structure and molybdenite. V_2 and V_3 seem discrete in their characteristics, but the same fault may contain both vein types. Rather inconclusive evidence of crosscutting indicates the molybdenite-bearing veins are younger.

V_4 are veins and veinlets of variable orientation commonly at a high angle to V_1, V_2, and V_3. They are most characteristically oriented in S_3 (parallel to fold axes of S_2) and as gash veins related to V_2 and V_3. Figure 25 demonstrates an interrelationship of S_3 and V_4 which was suspected in the field. A girdle is formed by the poles to S_3 and V_4 that is virtually complete. This suggests that S_3 and V_4 are related and were both formed toward the end of the deformational and mineralizing process. V_4 veins are irregular and their individual continuity small in spite of widths up to 1 foot (30 centimetres) or more. They

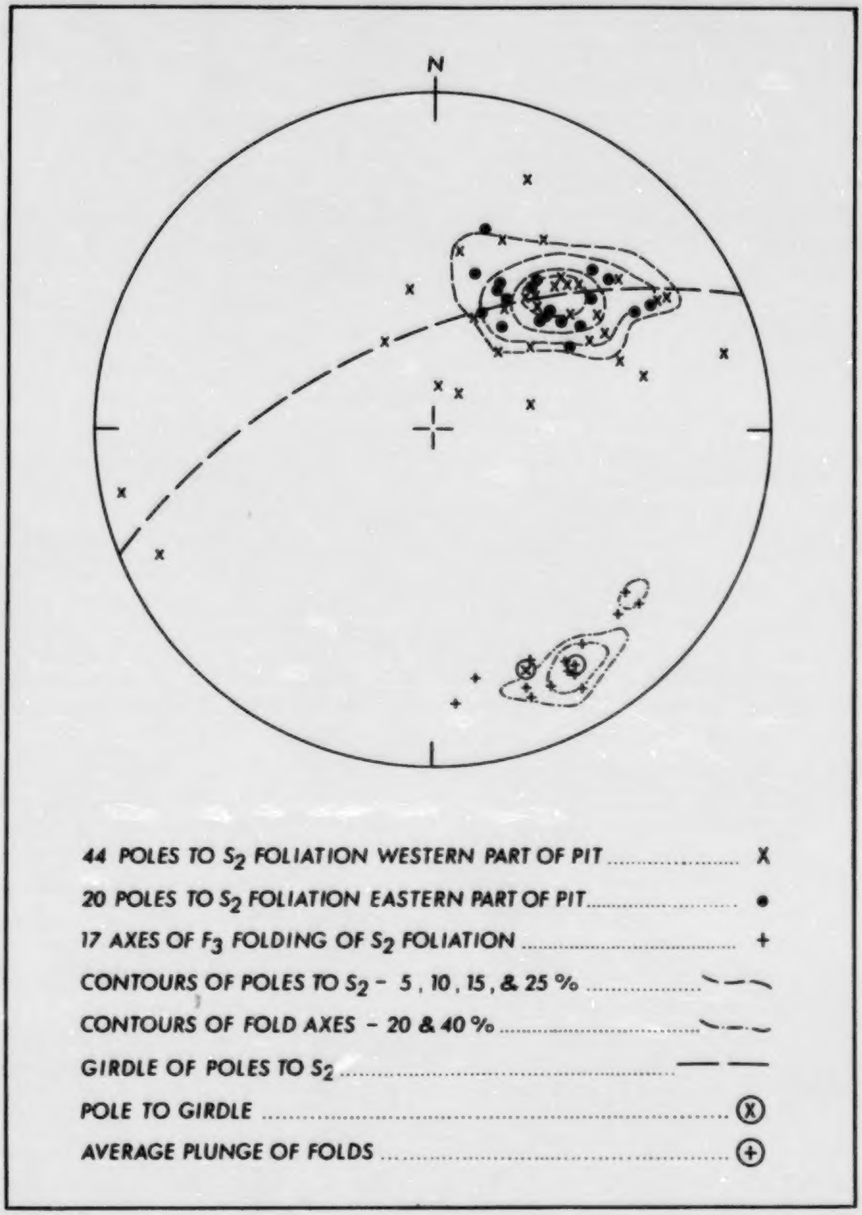

N
44 POLES TO S_2 FOLIATION WESTERN PART OF PIT X
20 POLES TO S_2 FOLIATION EASTERN PART OF PIT .... ●
17 AXES OF F_3 FOLDING OF S_2 FOLIATION .... +
CONTOURS OF POLES TO S_2 – 5, 10, 15, & 25 % .... — —
CONTOURS OF FOLD AXES – 20 & 40 % .... —·—
GIRDLE OF POLES TO S_2 .... — —
POLE TO GIRDLE .... ⊗
AVERAGE PLUNGE OF FOLDS .... ⊕

Figure 24. Gibraltar East pit, stereoprojection of structural elements related to S_2 foliation.

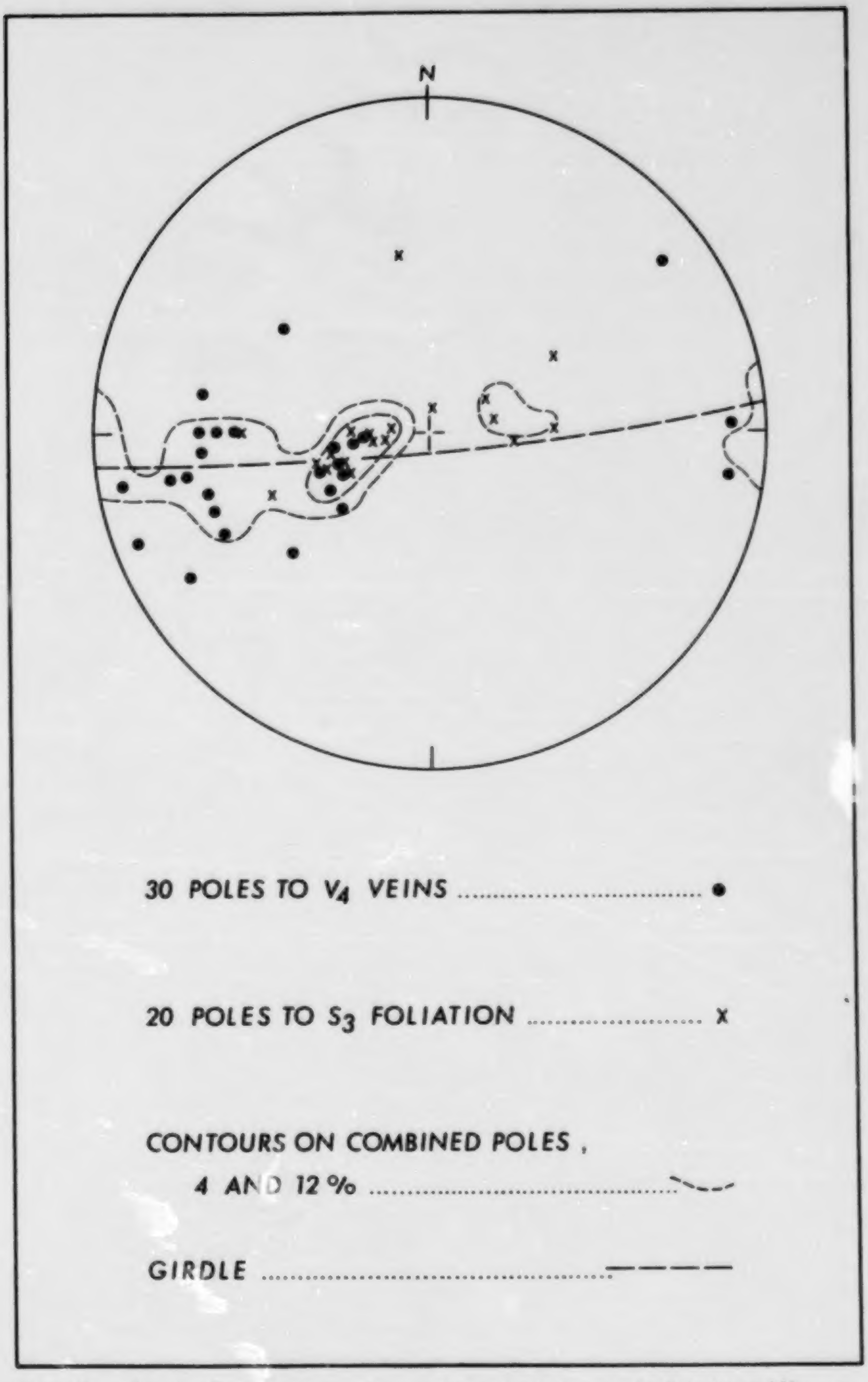

N
30 POLES TO V_4 VEINS .... ●
20 POLES TO S_3 FOLIATION x
CONTOURS ON COMBINED POLES ,
4 AND 12 % ....
GIRDLE ....

Figure 25. Gibraltar East pit, stereoprojection of structural elements, S_3 foliation and V_4 veins.

commonly appear to grade into V_1 or V_2 or V_3's, but can definitely be found cutting each of these vein sets. They are composed of white quartz with large blebs of chlorite, carbonate, chalcopyrite, and minor pyrite. They have no alteration envelopes. They appear to be secretional veins formed by mobilization of earlier veins and wallrocks late in the deformational and mineralizing process with movement into low pressure habitats.

Relationships between Structure and Mineralization: The relationship in space and time between the structural development and mineralization can be rationalized on the basis of the foregoing. Primary igneous foliation S_1 was intensified by a continuing couple with the upper 'plate' moving upward and northward. After initial formation of S_2, the V_1 fracture stockwork formed parallel and movement was channeled along these planes until filled and 'frozen.' However, general movement continued on S_2, intensifying it, eventually forming the strike faults with coinciding crumpling of S_2, and later filling with V_2 and V_3. During the process of folding S_2, the S_3 foliation formed, and secretional mobilization of V_4 from available veins and walls moved into these low pressure sites.

Leaching and Secondary Enrichment: The Gibraltar East orebody has a leached cap extending 50 to 70 feet deep as a subdued reflection of the bedrock surface. An enriched zone extending 100 to 200 feet below the leached cap is related in part to zones of intense fracturing or faulting and presumably groundwater flow. Figure 23 shows the approximate location of these surfaces. Most of the enrichment consists of chalcocite which coats and replaces pyrite and chalcopyrite. Malachite and azurite are only found near the upper surface of the enriched zone. Cuprite is also commonest in the upper part of the zone and some masses have a native copper core. The latter occurs also in wiry masses within fault zones. During the Pleistocene, glacial ice moving from the southeast out of the Cariboo Mountains overrode the area and bedrock was actively eroded and shaped. Therefore the close relationship between the shape of the enriched and leached zones to the present surface indicates that the oxidation and leaching continued after the Pleistocene, although much of the process may date from the Tertiary.

SYNTHESIS: A preliminary synthesis has been made from the data available. Geologic mapping and petrologic study indicate the existence of a modest zoning of the Granite Mountain pluton from a mafic exterior to a felsic core, and a consistent foliation transverse to the orientation of the long dimension of the pluton which is not known in the wallrocks remote from the pluton. Study of the relationship between primary igneous foliation, the secondary deformational foliation, and vein formation indicates a continuum of movement of similar orientation. The relationship between the second foliation (S_2), third foliation (S_3), and the structural relationship of the four vein sets indicates the mineralization was an integral part of this process. The Granite Mountain pluton would thus appear to have been intruded as a tongue-shaped pluton rooted to the south and probably steepening downward. A central tongue of leucocratic nature forms a domal core with peripheral bodies characterized by quartz sulphide stockworks. Emplacement, deformation, and mineralization appear to have been a continuous process, acting under a couple with the upper southern plate moving upward and northward. This couple may have been related to magma pressure continuing to act like a piston from below on the upper arcuate portion of the congealing plutonic mass.

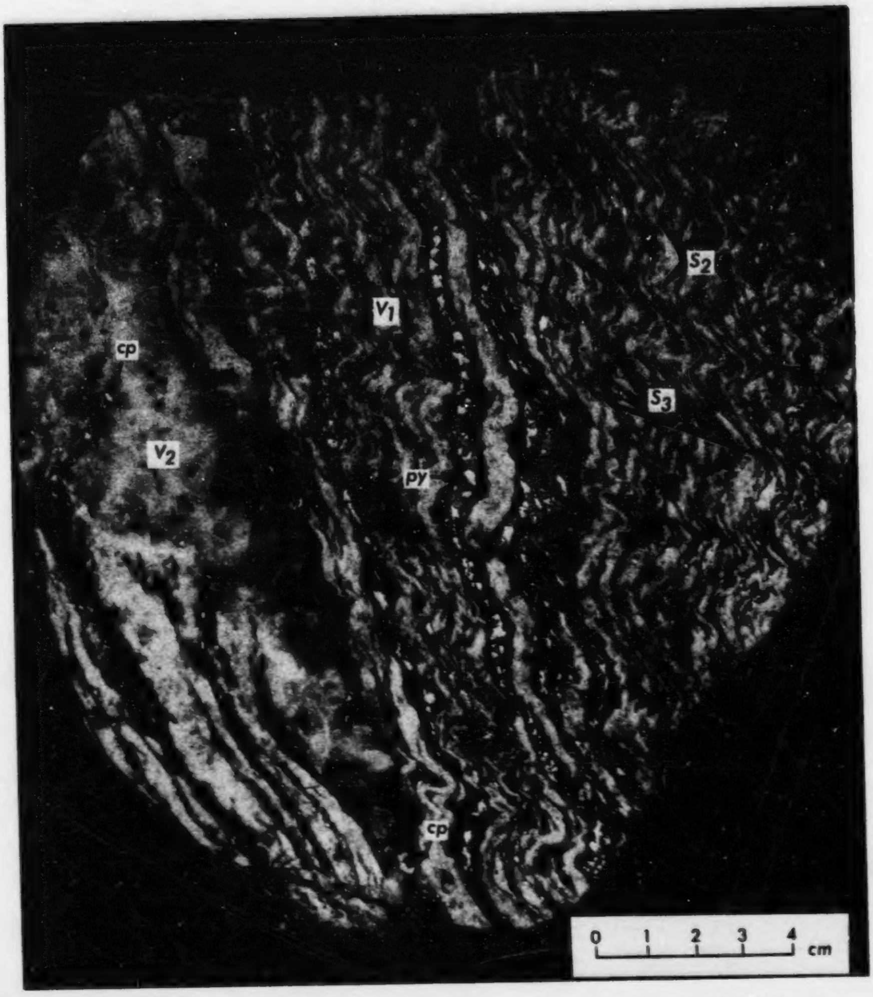


Plate VII. Foliated Granite Mountain granodiorite, westernmost Gibraltar East pit, showing intense S_2 foliation (F_4), crenulation of S_2 to form S_3, dark V_1 veins with pyrite (white) crenulated with S_2, drusy V_2 vein with minor decollement and chalcopyrite (nearly white).

WORK DONE:

The plant operated 363 days, 15,082,233 tons of ore being milled to recover 213,383 tons of copper concentrate. During the latter part of the year the molybdenum recovery circuit was phased into service. Concentrates were trucked to McAllister Siding for shipment by British Columbia Railway, some 50 covered gondola cars being assigned to this duty.

The average number of employees was 510 in 1973. Total connected horsepower was 43,600 using 186,431,800 kilowatt-hours of power. In mining operations a total of 1,017,000 feet of production blastholes was drilled.

During the year, the nominal 30,000-ton-per-day concentrator operated at a throughput in excess of 41,000 tons per day. As a result, phase 1 mining plan in the Gibraltar East pit is ahead of schedule, necessitating advances in scheduling of the draining of Granite Lake and the start on the preparation of the Granite Lake orebody for mining.

Reclamation of disturbed areas, procedural testing of species, and other environmental activity have been initiated.

Major equiment included: three P&H 2100-B shovels, one Marion 191-M shovel, 21 Lectra Haul M-85 trucks, two Bucyrus-Erie 45-R drills, one Marion M-4 drill, one D-9 Caterpillar, four D-8 Caterpillars, one Caterpillar 824 loader, one Caterpillar 16 grader, two Caterpillar 14 graders, one P&H 50-ton crane, and one Telecruiser 15-ton crane.

REFERENCES:

Campbell, R. B. (1961), Quesnel Lake, *Geol. Surv., Canada,* Map 3-1961; Drummond, A. D. (1972), Gibraltar, *I.G.C.,* Guidebook, Excursion A09-C09, Copper and Molybdenum Deposits of the Western Cordillera, pp. 48-53; Drummond, A. D., Tennant, S. J., and Young, R. J. (1973), The Inter-Relationship of Regional Metamorphism, Hydrothermal Alteration and Mineralization at Gibraltar Mines Copper Deposit in B.C., *C.I.M.,* Bull., Vol. 66, No. 730, pp. 48-55; Eastwood, G.E.P. (1969), Geology of the Granite Mountain Stock, *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, pp. 162-172; Kirkham, R. V. (1974), Geology of Copper and Molybdenum Deposits in Canada, *Geol. Surv., Canada,* Paper 74-1, Pt. A, pp. 377, 378; Nockolds, S. R. (1954), Average Chemical Compositions of Some Igneous Rocks, *Geol. Soc. Am.,* Bull., Vol. 65, 1954, pp. 1007-1032; Rotherham, D. C., Drummond, A. D., and Tennant, S. J. (1972), Exploration of Gibraltar, *Western Miner,* Feb., 1972, pp. 25-28; Streckeisen, A., *et al.* (1973), Classification and Nomenclature of Plutonic Rocks, *IUGS,* Geological Newsletter, Vol. 1973, No. 2, pp. 110-127; Sutherland Brown, A. (1957), McLeese-Cuisson Lake Area, *Minister of Mines, B.C.,* Ann. Rept., 1957, pp. 14-18; Sutherland Brown, A. (1966), Geology of Granite Mountain-Cuisson Lake Area, *Minister of Mines, B.C.,* Ann. Rept., 1966, pp. 121-124; Tipper, H. W. (1959), Quesnel, *Geol. Surv., Canada,* Map 12-1959; Annual Reports of Gibraltar Mines, 1972-1973.

KATE (93B-21) (Fig. D, No. 35)

LOCATION: Lat. 52° 59′ Long. 122° 22′ (93B/16W; 93G/1W)
CARIBOO M.D. Six miles east of Quesnel, on the north side of Quesnel River, at approximately 1,600 feet elevation.

CLAIMS: KATE 1 to 14, 20 to 45, RUTH 9 to 12, 25 to 39, M&S 1, 2, 7, 8, QR 1 to 5 Fractions, KOPPER NOB 1 to 6, RICH 1 to 4, DAPHNE Fraction.

(93C/3W)

OWNER: Canyon Creek Holdings Ltd.

OPERATOR: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.

METALS: Copper, molybdenum, gold, silver.

DESCRIPTION: Chalcopyrite, bornite, and molybdenite occur in a quartz feldspar-biotite porphyry which has intruded andesitic country rock of Upper Triassic or Lower Jurassic age.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Kate, Rich, Ruth, and M&S claims; pole-dipole frequency domain IP survey, 12.6 line-miles; IP survey, 4.4 line-miles; magnetometer survey, 22.3 line-miles; geochemical survey, 24 soil samples and 60 silt samples; surface diamond drilling, three holes totalling 750 feet on Kopper Nob 3 and 5.

REFERENCES: Assessment Reports 4208, 4545.

ANAHIM LAKE 93C

KF (93C-1) (Fig. D, No. 100)

LOCATION: Lat. 52° 01' Long. 125° 23' (93C/3W)
CARIBOO M.D. Southwest end of McClinchy Lake, between 4,800 and 5,500 feet elevation.

CLAIMS: C 1 to 23, MJ 1 to 10, DK 1 to 5, DK 6 Fraction, DK 7 to 13, DK 14 Fraction.

OWNER: J. H. Montgomery.

OPERATOR: RIO TINTO CANADIAN EXPLORATION LIMITED, Box 49108, Vancouver V7X 1G4.

METALS: Copper, molybdenum.

DESCRIPTION: In the area, Jurassic basic volcanic rocks have been intruded by diorite which has been intruded by quartz monzonite and quartz porphyry dykes. Breccia pipes showing varying degrees of alteration and mineralization have been formed. Mineralization consists of chalcopyrite, bornite, and pyrite disseminated and as fracture coatings in breccia pipes.

WORK DONE: Surface diamond drilling, two BQ holes totalling 391 feet on C 17 and DK 11.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 162; 1970, p. 202; Assessment Report 4209.

WHITESAIL LAKE 93E

LEN (HUCKLEBERRY) (93E-37, 38, 39) (Fig. D, No. 36)

By J. F. Hutter

LOCATION: Lat. 53° 41' Long. 127° 10' (93E/11E)
OMINECA M.D. North of Tahtsa Reach, 2 miles west-southwest of Huckleberry Mountain, at approximately 3,400 feet elevation.

(93E/11E)

CLAIMS: LEN 1 to 58, 60 to 84, 86, 88, 90, 92, 94, 96, 98, 100, BERRY 2 to 4 Fractions.

OWNER: Kennco Explorations, (Western) Limited.

OPERATOR: THE GRANBY MINING COMPANY LIMITED, 2000, 1055 West Hastings Street, Vancouver.

METALS: Copper, minor molybdenum, zinc.

DESCRIPTION: Chalcopyrite and minor molybdenite occur in both hornfelsed volcanic rocks and a small granodiorite porphyry stock of Late Cretaceous age.

WORK DONE: A drilling programme comprising 43,824 feet in 47 diamond-drill holes on Len 4, 6, 17, and 19 and the deepening of 8 holes was completed. The claims and surface workings were mapped and access roads were improved and gravelled. A feasibility study to determine the potential of the property is currently in progress.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 104-107; 1972, p. 341.

SUS (Fig. D, No. 145)

LOCATION: Lat. 53° 43.5' Long. 127° 08.5' (93E/11E)
OMINECA M.D. Fifty-three miles southwest of Houston, approximately 1.75 miles east-northeast of Sweeney Lake, at about 3,500 feet elevation.

CLAIMS: SUS 1 to 44.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

DESCRIPTION: One percussion hole intersected 80 feet of overburden and then volcanic rocks of the Hazelton Group from 80 to 180 feet. No sulphides were present. The other two holes failed to reach bedrock and both were stopped at 100 feet in overburden.

WORK DONE: Percussion drilling, three holes totalling 380 feet on Sus 3 and 4.

ANNA (Fig. D, No. 147)

LOCATION: Lat. 53° 44' Long. 127° 05' (93E/11E)
OMINECA M.D. Fifty miles southwest of Houston, 5 miles south-southwest of Twinkle Lake, at approximately 3,500 feet elevation.

CLAIMS: ANNA 1 to 16.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

DESCRIPTION: Six percussion holes intersected volcanic and sedimentary rocks of the Hazelton Group. Overburden averaged 72 feet. Minor pyrite was present in all holes.

WORK DONE: Percussion drilling, six holes totalling 1,390 feet on Anna 1, 4, 11, and 12.

EMERALD GLACIER MINE (93E-1) (Fig. D, No. 101)

By J. F. Hutter

LOCATION: Lat. 53° 44.5' Long. 127° 15.5' (93E/11W)
OMINECA M.D. In the Sibola Range north of Tahtsa Lake, on Mount Sweeney, between 6,000 and 6,500 feet elevation.

CLAIMS: Mineral Lease M-15 including EMERALD and EMERALD NO. 1 (Lots 2762 and 2761) and 27 located claims.

OWNER: EMERALD GLACIER MINES LIMITED, Box 221, Terrace.

METALS: Silver, lead, zinc.

DESCRIPTION: The main vein and others which have been developed are mineralized shears or fault zones in bedded tuffs and argillites intruded by numerous aplitic and granitic dykes. Sulphide minerals in the main vein include galena, sphalerite, chalcopyrite, and pyrite, in order of decreasing abundance. The gangue is mainly quartz and altered rock but includes calcite and little rhodochrosite.

WORK DONE: Some exploration surface stripping, otherwise inactive.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 92, 93; 1971, p. 145.

DW, CUP (93E-55) (Fig. D, No. 12)

LOCATION: Lat. 53° 46' Long. 127° 42' (93E/12E, 13E)
OMINECA M.D. West shore of Nanika Lake, east of Mount Mortella, at approximately 3,100 feet elevation.

CLAIMS: DW 1 to 14, CUP 1 to 38, CORB 1 to 55, 57 to 69, 71 to 80, PUC 1 and 2, FEN 1 to 10.

OWNER: Aston Resources Limited.

OPERATOR: GRANGES EXPLORATION AKTIEBOLAG, 1060, 1055 West Hastings Street, Vancouver.

METALS: Copper (molybdenum).

DESCRIPTION: Chalcopyrite, pyrite, and minor bornite occur in a fault zone between granitic rocks of the Coast Plutonic Complex and volcanic rocks of the Hazelton Group.

WORK DONE: Surface diamond drilling, six holes totalling 2,719 feet on DW 3, 11, 12 and Corb 18, 20.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 342.

IDA, NADI (93E-71) (Fig. D, No. 102)

LOCATION: Lat. 53° 50' Long. 127° 03' (93E/14E)
OMINECA M.D. Sixty miles south of Smithers, 1 mile northeast of the west end of Nadina Lake, at approximately 3,600 feet elevation.

CLAIMS: IDA 1, 2, 14, 16, 18, 20, 31, 33, 35 to 42, 55, 57 to 60, 73 to 76, 87, 89, 174 Fraction, NADI 1 to 20, 32, 33, 35, 37, 40 to 49, 51, 52, 54, 55, NADI 50 and 53 Fractions, NADI-M 1 to 3, 4, 6, HILL 1 to 54.

OWNERS: JOREX LIMITED, 600, 85 Richmond Street, Toronto, Ont. and DOME EXPLORATION (CANADA) LIMITED, 702, 360 Bay Street, Toronto, Ont.

(93E/13E)

METAL: Copper.

DESCRIPTION: Volcanic rocks of Jurassic and Cretaceous age are intruded by porphyry stocks, which contain some pyrite and chalcopyrite.

WORK DONE: Magnetometer survey, 5 line-miles and geochemical soil survey, 125 samples covering Hill 1-54; surface diamond drilling, 15 holes totalling 7,349 feet on Ida 37, 38, 39, 40, Nadi-M 2, Nadi 31, and Nadi 50 Fraction.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 345.

RD (93E-83) (Fig. D, No. 38)

LOCATION: Lat. 53° 59' Long. 127° 34' (93E/13E; 93L/4E)
OMINECA M.D. Approximately 2 miles east of Morice Lake, on the north slope of Redslide Mountain, at about 5,000 feet elevation.

CLAIMS: RD 1 to 16.

OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METAL: Copper.

DESCRIPTION: Hazelton Group volcanic and sedimentary rocks have been intruded by granitic plugs and porphyry dykes. Chalcopyrite and bornite occur in shattered sedimentary rocks adjacent to the dykes.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering RD 1, 2, 7, and 8; geochemical survey, six chip samples taken and 168 soil samples taken at 100 by 200-foot grid spacing covering same claims.

REFERENCE: Assessment Report 4868.

TA (Fig. D, No. 39)

LOCATION: Lat. 53° 48' Long. 127° 31' (93E/13E, 14W)
OMINECA M.D. Three miles northeast of Mount Bergeland, on Bergeland Creek.

CLAIMS: TA 1 to 50, 1 to 13 Fractions.

OWNERS: D. Tuttle and D. S. Boyd.

OPERATOR: GRANGES EXPLORATION AKTIEBOLAG, 1080, 1055 West Hastings Street, Vancouver.

DESCRIPTION: A broad overburden-filled valley is underlain by rhyolitic breccia and andesite of the Hazelton Group.

WORK DONE: Magnetometer survey, 25.4 line-miles; IP survey, 11.54 line-miles; and geochemical soil survey, 455 samples, 25.4 line-miles covering TA 1-24 and TA 12 and 13 Fractions; surface diamond drilling, two holes totalling 1,156 feet on TA 15, 17, and 10.

REFERENCE: Assessment Report 4578.

PC, JOW (93E-11) (Fig. D, No. 151)

LOCATION: Lat. 53° 57′ Long. 127° 46′ (93E/13W)
OMINECA M.D. Approximately 50 miles southeast of Smithers, 4 miles west of Morice Lake and 8 miles north-northeast of the south tip of Morice Lake, at approximately 7,000 feet elevation.
CLAIMS: JOW 1 to 20.
OWNER: Fred H. Jowsey.
OPERATOR: AGGRESSIVE MINING LTD., 1014, 111 Richmond Street West, Toronto, Ont.
METALS: Lead, zinc, silver, gold.
DESCRIPTION: Small stocks of quartz porphyry and feldspar porphyry intrude Hazelton Group volcanic rocks. Sphalerite, galena, chalcopyrite, and pyrite occur in a network of quartz stringers in quartz porphyry near the contact with volcanic rocks.
WORK DONE: Magnetometer and EM survey; geochemical soil survey, 101 samples covering Jow 1-20; trenching, 150 feet.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 146.

BERG (93E-46) (Fig. D, No. 40)

LOCATION: Lat. 53° 48′ Long. 127° 26′ (93E/14W)
OMINECA M.D. Fifty-five miles southwest of Houston, 7 miles south of Kidprice Lake, in the Tahtsa Range, north of Tahtsa Lake, between 5,000 and 6,000 feet elevation.
CLAIMS: BERG 11 to 24, 31, 34, 35, 37 to 44, 50, 51, 54, 55, 63, 64, 66 to 71, 73 to 86, 132 to 145, 251 to 262, 264 to 281, BERG 1 and 72 Fractions, TAKI 1 to 22.
OWNER: Kennco Explorations, (Western) Limited.
OPERATOR: CANEX PLACER LIMITED, 800, 1030 West Georgia Street, Vancouver.
METALS: Copper, molybdenum.
DESCRIPTION: Late Jurassic to Early Cretaceous fragmental volcanic rocks, tuffs, and agglomerates have been intruded by a dioritic offshoot of the Coast Plutonic Complex. A younger stock of quartz monzonite porphyry was intruded along the volcanic-diorite contact. Quartz-latite porphyry dykes, a late phase of the quartz monzonite porphyry, intrude all rocks. Chalcopyrite, molybdenite, pyrite, and gypsum occur in concentric zones around the quartz monzonite porphyry stock.
WORK DONE: IP survey, 2 line-miles covering Berg 17, 20, 38, 39, 41, 42, 44 and Taki 9; surface diamond drilling, 12 holes totalling 10,870 feet on Berg 15, 18, 19, 20, 21, 37, 38 and Taki 9; road construction, 2 miles on Berg 41-44 and Taki 9.
REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1966, p. 105; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 343.

BERGETTE (93E-52) (Fig. D, No. 41)

LOCATION: Lat. 53° 49′ Long. 127° 17′ (93E/14W)
OMINECA M.D. Forty-five miles southwest of Houston, 7 miles south of Smoke Mountain and 3 miles north of Mount Sweeney, at approximately 6,000 feet elevation.

CLAIMS: BERGETTE 1 to 14, FG 1 to 6, 9, 11, 13, 15, 24 to 31, 38 to 49, 52, 54, 67, 69 to 74, 79 to 82, 91 to 94, BS 1 to 10, BS 1 to 4 Fractions, BF 1 to 6, 19 to 22, 65, 69, GN 1 to 8, LK 1 to 60.

OWNERS: G.O.M. Stewart, R. Blusson, Frontier Exploration Limited, Granges Exploration Aktiebolag, and R. Reid.

OPERATOR: GRANGES EXPLORATION AKTIEBOLAG, 1060, 1055 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The property is underlain by Hazelton Group volcanic rocks. Locally tuffs and breccia units have been intruded by two plutons. One, a dark grey biotite hornblende granodiorite, has been strongly altered and fractured over a large area. Small outcrops suggest silicification and pervasive pyritization. Molybdenum was identified with pyrite in reticulate quartz veins. Chalcopyrite occurs in a hornfels zone and also in latite porphyry outcrops.

WORK DONE: IP survey, 7.09 line-miles covering BS 4-8, BS 4 Fraction, Bergette 2-5, 8-10, BF 19-22, and LK 1, 3; surface diamond drilling, 4,002 feet on BS 8, Bergette 4, 7, 10, and BF 2, 20.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 147-157; 1972, pp. 343-345.

TX (Fig. D, No. 146)

LOCATION: Lat. 53° 49′ Long. 127° 04′ (93E/14E)
OMINECA M.D. Approximately 45 miles southwest of Houston, on the west side of Twinkle Lake, at about 3,400 feet elevation.

CLAIMS: TX 1 to 10.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

DESCRIPTION: Percussion holes intersected Hazelton Group volcanic rocks. Eighty to 90 feet of overburden was encountered.

WORK DONE: Percussion drilling, three holes totalling 460 feet on TX 4, 6, and 10.

SLIDE, BOG, TWIN, MAX (Fig. D, No. 37)

LOCATION: SLIDE, SYLVIA –
Lat. 53° 50′ Long. 127° 16′ (93E/14)
OMINECA M.D. Centred 8 miles west of Twinkle Lake.
BOG, PAM –
Lat. 53° 51′ Long. 127° 02′ (93E/14E)

(93E/14E)
OMINECA M.D. Centred 2 miles north of Twinkle Lake.

TWIN, ACE, WEE –
Lat. 53° 44' Long. 127° 06' (93E/11E, 14E)
OMINECA M.D. Centred 1.5 miles northeast of Huckleberry Mountain.

MAX –
Lat. 53° 40' Long. 127° 02' (93E/11E)
OMINECA M.D. Centred 1 mile southeast of Ox Lake.

CLAIMS: SLIDE 1 to 95, SYLVIA 1 to 36, BOG 1 to 49, PAM 1 to 108, TWIN 1 to 80, ACE 1 to 115, WEE 1 to 41, 43, 45, 47, 49, 51, 53, 55, 57 to 103, 110 to 142, MAX 1 to 45.

OWNER: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver V7P 2R4.

METAL: Copper.

DESCRIPTION: Granitic plutons of Late Cretaceous age have intruded Jurassic sedimentary and volcanic rocks. Pyrite and chalcopyrite occur as fracture fillings and disseminations in both the intrusive and layered rocks.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and 1 inch equals one-quarter mile; IP and magnetometer survey, 565 line-miles; geochemical soil, silt, and rock chip survey, 1,912 samples covering all claims; surface diamond drilling, 17 holes totalling 4,488 feet on Bog 14, 17, 18, 19, Ace 84, 85, Twin 7, 8, 9, 10, and Wee 3, 12.

LILY (DUAL) (93E-53) (Fig. D, No. 24)

LOCATION: Lat. 53° 55' Long. 127° 01' (93E/14E)
OMINECA M.D. Two miles south of Hill-Tout Lake, at approximately 3,500 feet elevation.

CLAIMS: AFP 1 to 26, HT 1 to 34.

OWNER: K. W. Livingstone.

OPERATOR: QUINTANA MINERALS CORPORATION, 1215, Two Bentall Centre, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Pyrite, chalcopyrite, and molybdenite are associated with typical porphyry copper alteration.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; geochemical survey, 100 samples covering AFP 10 and HT 3 and 5; percussion drilling, 11 holes totalling 1,490 feet on AFP 3, 6, 8, 10 and HT 12, 14, 16; road construction, 7 miles on HT 1-8, 12, 14, 16 and AFP 1-3, 6, 8, 10 (from Tahtsa road to property).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 346.

TETS (93E-84) (Fig. D, No. 42)

LOCATION: Lat. 53° 50′ Long. 126° 57′ (93E/15W)
OMINECA M.D. North of Tahtsa Reach, approximately 5 miles east-northeast of Twinkle Lake, at approximately 4,700 feet elevation.

CLAIMS: TETS 3 to 54.

OWNER: J. Shelford.

OPERATOR: GRANGES EXPLORATION AKTIEBOLAG, 1060, 1055 West Hastings Street, Vancouver.

METALS: Copper, zinc, lead, silver.

DESCRIPTION: The property is underlain by a variety of volcanic and sedimentary rocks of the Hazelton Group. Occurrences of bornite, sphalerite, and chalcopyrite with minor galena and pyrite have been noted.

WORK DONE: Magnetometer survey, 40.63 line-miles and geochemical soil survey, 1,294 samples taken at 200 by nominal 400-foot grid spacing, approximately 49 line-miles covering all claims; trenching, approximately 30 feet on Tets 15 and 16.

REFERENCE: Assessment Report 4580.

MIN (93E-85) (Fig. D, No. 144)

LOCATION: Lat. 53° 50′ Long. 126° 45′ (93E/15)
OMINECA M.D. Fifty miles southwest of Burns Lake, 7 miles northwest of the entrance to Tahtsa Reach.

CLAIMS: MIN 1 to 20.

OWNER: SAIWA RESOURCES LTD., 404, 850 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: On Min 7 Hazelton volcanic rocks have been extensively fractured, veined by quartz, silicified, and mineralized with pyrite, chalcopyrite, molybdenite, and magnetite.

WORK DONE: Linecutting and magnetometer survey, 13 line-miles; geochemical soil survey, 690 samples taken at 100 by 200-foot grid spacing covering Min 5-10.

REFERENCE: Assessment Report 4728.

FORD (Fig. D, No. 43)

LOCATION: Lat. 53° 53′ Long. 126° 38′ (93E/15E)
OMINECA M.D. Twelve miles west of Wisteria, Shelford Hills, at approximately 3,700 feet elevation.

CLAIMS: FORD 1 to 200.

OWNERS: James Todd and R. Blusson.

OPERATOR: NORTHERN GIANT MINES LTD. (formerly Black Giant Mines Ltd.), 2002, 1177 West Hastings Street, Vancouver.

DESCRIPTION: The claim group is underlain by volcanic rocks of the Hazelton Group, sections of which are altered and pyritized. A zinc geochemical anomaly 3,000 feet in diameter includes smaller silver and molybdenum anomalies.

(93F/5E)

WORK DONE: IP survey, 10 line-miles covering Ford 1-16, 21, 22; linecutting, 10.3 miles of grid covering same claims.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, p. 110; Assessment Report 2256.

NECHAKO RIVER 93F

MR (Fig. D, No. 103)

LOCATION: Lat. 53° 27′ Long. 125° 32′ (93F/5E)
OMINECA M.D. On the north side of Chelaslie Arm, 7 miles east-southeast of the west end.

CLAIMS: MR 55 to 60, 79 to 99, MR 6-00 to 6-08.

OWNER: Martin Lubbers.

OPERATOR: CANEX PLACER LIMITED, Endako Mines Division, Endako.

DESCRIPTION: Hazelton Group andesite, basalt, and chert pebble conglomerate have been intruded by rhyolitic and dacitic dyke rocks and stocks of the Ootsa Lake Group.

WORK DONE: Geochemical soil survey, 196 samples taken at 400-foot intervals along reconnaissance lines and linecutting covering MR 55, 57, 59, 60, 79-99 and MR 6-00 to 6-07.

REFERENCE: Assessment Report 4610.

MJM, MINT, LODE (Fig. D, No. 149)

LOCATION: Lat. 53° 58′ Long. 124° 49′ (93F/15W; 93K/2W)
OMINECA M.D. About 4 miles south of Fraser Lake village, on Nithi Mountain, between 2,600 and 4,000 feet elevation.

CLAIMS: MJM 1 to 11, MINT 1 to 7, LODE 1 to 6, 9, 10, PEN 1 to 3, TOTEM 1 and 2, PINE 1 and 2 Fractions, LODE 1 and 2 Fractions, MO 1 to 28, MO 1 to 3 Fractions, AXE 1 to 20, AXE 1 to 3 Fractions, JS 1 to 8.

OWNER: NITHEX EXPLORATION AND DEVELOPMENT LTD., Box 73, Endako.

METAL: Molybdenum.

DESCRIPTION: The Casey quartz monzonite occurs in the east half and the Nithi quartz monzonite occurs in the west half of the claim group. All intrusive rocks have been highly altered and fractured. Aplite dykes are common. Mineralization includes economic molybdenite, in fractures and disseminated. Other minerals include minor pyrite, specularite-hematite, limonite, and very rare chalcopyrite.

WORK DONE: Geochemical survey, 1,593 samples covering Axe 1-20, Axe 1-3 Fractions, MO 1-6, 7, 9, 11, and MO 1-3 Fractions; surface diamond drilling, six holes on MO 6, MO 1 Fraction, and MJM 10; road construction, 2,000 feet on Lode 1, 2, and Pine 1 Fraction; trenching, 5,000 square feet on MJM 8.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 348.

PRINCE GEORGE 93G

KATE (93B-21) (Fig. D, No. 35)

LOCATION: Lat. 52° 59' Long. 122° 22' (93B/16W; 93G/1W)
Report on this property in section 93B/16W.

G, GG, R, RB (93G-27) (Fig. D, No. 104)

LOCATION: Lat. 53° 11' Long. 122° 55' (93G/2W)
CARIBOO M.D. Thirty miles northwest of Quesnel, on the south flank of Blackwater Mountain, between 2,700 and 3,000 feet elevation.
CLAIMS: R 1 to 8, RB 1 to 12, G 1 to 10, GG 1 to 10.
OWNER: BALI EXPLORATION LTD., 101, 325 Howe Street, Vancouver.
METAL: Copper.
DESCRIPTION: Cache Creek Group chert and argillite are exposed in the southeast, and diorite in the east-central part of the claim area; Lower Tertiary basalt underlies the northern claims. The diorite has been crushed or sheared and contains some pyrite, chalcopyrite, and pyrrhotite.
WORK DONE: Reconnaissance surface geological mapping, 1 inch equals 1,000 feet; airborne magnetometer and VLF EM survey, 50 line-miles; ground magnetometer and EM survey, 40 line-miles; and geochemical soil survey, 472 samples taken at 500 by 500-foot grid spacing, 40 line-miles covering all claims.
REFERENCES: Assessment Reports 4573, 4816.

McBRIDE 93H

BUZ (Fig. D, No. 150)

LOCATION: Lat. 53° 05' Long. 121° 44' (93H/4E)
CARIBOO M.D. Forty-eight miles east of Quesnel on the east slope of Nelson Mountain, at approximately 4,500 feet elevation.
CLAIMS: BUZ 1 to 12, 31 to 44, 61 to 74, ZUB 1 Fraction, CHISHOLM 1 to 4, CHISHOLM 7 Fraction, BURN, GARBO, WONDER Fraction, WONDER, OSLO Fraction, ARK 1, GLORIA.
OWNER: GOLDEN ARK EXPLORATIONS LTD., Box 904, Vernon.
WORK DONE: Trenching, 2,000 feet on Buz 31, 33, 34, 72; stripping, 400 feet by 20 feet on Buz 72.

MOSQUITO (93H-10) (Fig. D, No. 105) By A. D. Tidsbury

LOCATION: Lat. 53° 07' Long. 121° 36' (93H/4E)
CARIBOO M.D. Two miles west of Wells, on Island Mountain, between 4,300 and 4,600 feet elevation.
CLAIMS: Twenty-nine Crown-granted claims including MOSQUITO (Lot 10355), MOSQUITO Fraction (Lot 10359), VANCOUVER (Lot 10356), PORT HOPE (Lot 10357), SEATTLE (Lot 10358).

(93J/14W)

OWNER: Mosquito Creek Gold Mining Company Limited.

OPERATOR: HOME OIL COMPANY LIMITED, 202, 850 West Hastings Street, Vancouver.

METALS: Gold, minor silver.

DESCRIPTION: A folded succession of metasedimentary rocks including Midas argillite and Snowshoe (Rainbow and Baker) quartzite and limestone are crossed by the Mosquito Creek fault. The rocks enclose quartz veins containing up to 5 per cent pyrite and minor galena and scheelite; some limestone beds are replaced by massive pyrite containing gold.

WORK DONE:

In 1967, The Cariboo Gold Quartz Mining Company Limited closed the Aurum mine on the east side of Island Mountain after 34 years of production. During 1972, an initial exploration programme was conducted in search of the extension of the contact and fault zone. During 1973, based on results from the 1972 initial work, 23 diamond-drill holes totalling 13,860 feet on the Mosquito Fraction, Seattle, and Port Hope claims and 37 percussion-drill holes totalling 10,910 feet on the Mosquito, Mosquito Fraction, Seattle, and Port Hope claims were completed along the favourable trend.

An adit, designated 4400, was driven to provide access for additional exploration and testing. Badly faulted ground stopped the adit at 120 feet. It is now planned to sink a shaft in a more substantial area, and to continue underground exploration and development from various shaft levels.

Surveys consisted of surface geological mapping at 1 inch equals 100 feet covering Mosquito Fraction, underground geological mapping, 1 inch equals 400 feet covering Mosquito, preliminary topographic mapping, and mapping of roads and drill holes.

Six thousand feet of road construction, between the Oliver and Port Hope claims, and 1,000 feet of trenching on the Mosquito Fraction and Vancouver claims were carried out.

REFERENCE: *B.C. Dept. of Mines,* Bull. 38, p. 72.

McLEOD LAKE 93J

NICK (93J-14) (Fig. D, No. 148)

LOCATION: Lat. 55° 00' Long. 123° 17' (93J/14W; 93O/3W)
CARIBOO M.D. Four miles southwest of the north end of Royer Lake, south of Reed Lake, at approximately 3,200 feet elevation.

CLAIMS: NICK 1 to 8, 21 to 26.

OWNER: K. Lovang.

OPERATOR: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METALS: Copper, nickel.

DESCRIPTION: In the area Slide Mountain Group massive andesite has been intruded by gabbro and diorite. Carbonaceous quartzite is exposed on the northeast edge of the claims. The gabbro carries minor pyrrhotite.

(93K/2W)

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; linecutting and ground magnetometer survey, 19 line-miles; geochemical soil survey, 921 samples taken at 100 by 200-foot grid spacing covering Nick 1, 3, 5, 7, and 21-26.

REFERENCE: Assessment Report 4706.

FORT FRASER 93K

MJM, MINT, LODE (Fig. D, No. 149)

LOCATION: Lat. 53° 58′ Long. 124° 49′ (93F/15W; 93K/2W)
Report on this property in section 93F/15W.

ENDAKO MINE (93K-6) (Fig. D, No. 125)

By J. F. Hutter

LOCATION: Lat. 54° 02′ Long. 125° 06.5′ (93K/3E)
OMINECA M.D. One hundred and fifteen miles west of Prince George, north of the east end of Francois Lake, at approximately 3,200 feet elevation.

CLAIMS: Three hundred and fifty-one mineral claims, of which 22 are held under lease, including BOOT, TAN, ELK, BAR, JAY, and MO.

OWNER: CANEX PLACER LIMITED, Endako Mines Division, 1030 West Georgia Street, Vancouver; mine office, Endako; mine manager, J. D. Wright.

METAL: Molybdenum (production shown on Table I).

DESCRIPTION: A stockwork of quartz-molybdenite veins with minor pyrite and magnetite occurs in pervasively altered quartz monzonite. Several steeply dipping pre-mineral quartz feldspar porphyry and post-mineral basalt dykes are encountered. Several large faults crosscut the ore zone. Quartz veins with associated molybdenite, minor pyrite, and magnetite are primary mineralization. Calcite is often late vein material and kaolinite is the major secondary mineral in the alteration zone.

WORK DONE:

Fourteen diamond-drill holes, totalling 8,655 feet, were drilled on the Mo 1, Boot 1, 3, 9, Elk 3 Fraction, and Tan 4 claims and 7 percussion-drill holes, totalling 2,100 feet, were drilled on Boot 9. One mile of drill access road was constructed on the Boot 9 and Tan 4 claims.

New equipment purchased for the pit operation consisted of four 100-ton haulage trucks and one motor grader.

Major construction consisted of the rehabilitation of a 10-foot-diameter four-hearth dryer. This is expected to be completed in 1974 and will free the present dryer for conversion back to a roaster and a subsequent increase in oxide production.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, pp. 114, 115; 1972, p. 351.

NU, ELK (93K-8) (Fig. D, No. 126)

LOCATION: Lat. 54° 03′ Long. 125° 08′ (93K/3E)
OMINECA M.D. Five miles west of Endako, at approximately 3,200 feet elevation.

CLAIMS: NU, ELK, DEER, CORA, DIS, DAT, totalling 73.

OWNER: Denak Mines Ltd.

OPERATOR: CANEX PLACER LIMITED, Endako Mines Division, 1030 West Georgia Street, Vancouver.

METAL: Molybdenum.

DESCRIPTION: A quartz-molybdenum stockwork occurs in weak to intensely kaolinitic altered Endako quartz monzonite.

WORK DONE: Surface diamond drilling, 22 holes totalling 12,713 feet on Elk 4-6, Elk 12 Fraction, and Nu 2 and 4; percusion drilling, seven holes totalling 2,100 feet on Elk 4 and Nu 3 and 4; road construction, 1 mile on Elk 4-6 and Nu 2 and 4.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 352.

KEN (93K-2) (Fig. D, No. 124)

LOCATION: Lat. 54° 09′ Long. 125° 05′ (93K/3E)
OMINECA M.D. Five miles northwest of Endako, at approximately 2,900 feet elevation.

CLAIMS: KEN 1 to 26, 32, 34, 36, 38, 40, 50 to 58.

OWNER: AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver V6E 3L6.

METAL: Molybdenum.

DESCRIPTION: The claim group is underlain mainly by the Casey and Glenannan granites, both of which are phases of the composite Topley intrusions. Molybdenite occurs in a quartz vein stockwork within the eastern portion of the Casey granite, near its contact with the Glenannan granite.

WORK DONE: Surface diamond drilling, five holes totalling 2,812 feet on Ken 1 and 3.

SILVER GLANCE, GOLDEN GLORY (93K-30, 31) (Fig. D, No. 127)

LOCATION: Lat. 54° 17′ Long. 125° 55′ (93K/5W)
OMINECA M.D. West of Decker Lake, on Gerow Creek, at approximately 2,500 feet elevation.

CLAIMS: MO 1 to 10, GRE 43 and 44, DE 1 to 22, HRS 19 to 22, LARK 1 to 20, BEE 3 to 14.

OWNER: Decker Lake Mines Limited.

OPERATOR: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver V7P 2R4.

METALS: Copper, silver, lead, zinc.

DESCRIPTION: The area is underlain by altered and fractured Hazelton Group volcanic rocks. Mineralization includes chalcopyrite, malachite, galena, and sphalerite in quartz veins and is disseminated in the volcanic rocks.

(93K/6E, 7W, 2W, 3E)

WORK DONE: Time-domain IP survey, 31 line-miles and geochemical soil survey, 366 samples, 31 line-miles covering most of the claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 166; Assessment Report 4849.

HAN, FIR (93K-78) (Fig. D, No. 1)

LOCATION: Lat. 54° 15′ Long. 124° 57′ (93K/6E, 7W, 2W, 3E)
OMINECA M.D. Ten to 14 miles north of Endako, between and around Helene and Hanson Lakes, at approximately 3,700 feet elevation.

CLAIMS: HAN 1 to 144, FIR 1 to 48, 67 to 75, HEN 1 to 28, LENA 18 to 77, SHOV 1 to 32, JUS 1 to 8, 23 to 34, 51 to 59, 90 to 101, TRI 1 to 37.

OWNER: CANEX PLACER LIMITED, Endako Mines Division, 1030 West Georgia Street, Vancouver.

METALS: Copper, zinc, molybdenum.

DESCRIPTION: Foliated dioritic Topley intrusions, which have been intruded by an irregular stock of porphyritic rhyolite, are overlain by volcanic rocks of the Endako Group.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering Han 19-24, 90-99 and Fir 7-10; 1 inch equals 1,000 feet covering Han 19-24 and Fir 7-10; frequency-domain IP survey, 18.3 line-miles covering Han 1-28, 49-55, 59-63, 69-79, 80-84, 90-99, 104-111, 119-125, 131-134, 139-144, 149-154, Lena 63, 65, 75-78, Fir 2, 4, 17-20, and Jus 94, 95, 100; radem survey, 17 line-miles covering Han 17-28, 66-72, 91-100 and Fir 1-16; geochemical soil survey, approximately 400 samples taken at 200-foot intervals on 10 grid lines; percussion drilling, 35 holes, 9,000 feet on Han 4, 26, 53, 55, 57, 65, 82, 90, 92, 93, 95-97, 131 and Fir 17, 18; road construction, 7 miles covering same claims as percussion drilling; trenching, 14,600 feet on Han 6, 8, 10, 17-24, 90-100 and Fir 17-22.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 351; Assessment Reports 4286, 4703, 4758.

KID (93K-3) (Fig. D, No. 128)

LOCATION: Lat. 54° 24′ Long. 124° 52′ (93K/7W)
OMINECA M.D. Four miles due south of Shass Mountain.

CLAIMS: KID 1 to 8, 10, 14, 16, 18, 27, 29, 31-34, 36, 41, 43, 45, 46, 48, 51.

OWNER: AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver V6E 3L6.

METAL: Molybdenum.

DESCRIPTION: Molybdenite occurs in a quartz vein stockwork in a plug of quartz monzonite. Abundant pyrite is associated. Alteration is pervasive silicification, quartz veining, and minor kaolinization.

WORK DONE: Time-domain IP survey, 6 line-miles covering Kid 1-8, 14, 16, 18, 29, 31, 32, 41, 43, 45, and 46.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 117; Assessment Reports 1866, 4543.

PINCHI LAKE MINE (93K-49) (Fig. D, No. 129) By A. D. Tidsbury

LOCATION: Lat. 54° 38' Long. 124° 26' (93K/9W)
OMINECA M.D. Fourteen miles north-northwest of Fort St. James, on the northeast side of Pinchi Lake.

CLAIMS: Twenty-five Crown-granted, 43 located, and 71 optioned claims.

OWNER: COMINCO LTD., Box 220, Fort St. James.

METAL: Mercury.

DESCRIPTION: Cinnabar occurs as fracture and solution cavity fillings in breccia zones near faults in dolomitized limestone.

WORK DONE:

Mining was mechanized cut and fill, with mining being tackless and fill being hydraulically emplaced deslimed mill tailings blended with varying portions of cement. Some pillar recovery was undertaken.

Total development advance was 2,044 feet; total footage drilled, 161,564 feet; deslimed tailings backfill poured, 47,944 tons; and underground core drilling, 5,715 feet.

Major equipment included: three Wagner ST-5A scooptrams, one Wagner ST-2B scooptram, three Gardner-Denver drill jumbos, three Euclid R-13 trucks, one Caterpillar 980 front-end loader, and other ancilliary units.

Production was from two horizons in the main zone orebody, with pillar recovery from the initial mining operation. The open pit was not worked in 1973.

The Pinchi mine-rescue team won the regional competition, and entered the provincial competition.

Reclamation has been initiated and is continuing. Test plots on tailings pond areas have indicated adaptable and successful species of plants, trees, and grasses.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, p. 145; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 364.

SMITHERS 93L

TEL (Fig. D, No. 44)

LOCATION: Lat. 54° 03' Long. 126° 27' (93L/1W)
OMINECA M.D. North shore of Tsichgass Lake, which drains into Francois Lake.

CLAIMS: TEL 1 to 40.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

DESCRIPTION: Hazelton Group volcanic and epiclastic volcanic rocks have been intruded by a small dioritic plug. Mineralization noted consists mainly of disseminated pyrite.

WORK DONE: Surface geological mapping, 1 inch equals 800 feet; VLF EM and magnetometer survey, 30 line-miles; geochemical soil survey, 20 line-miles covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 169.

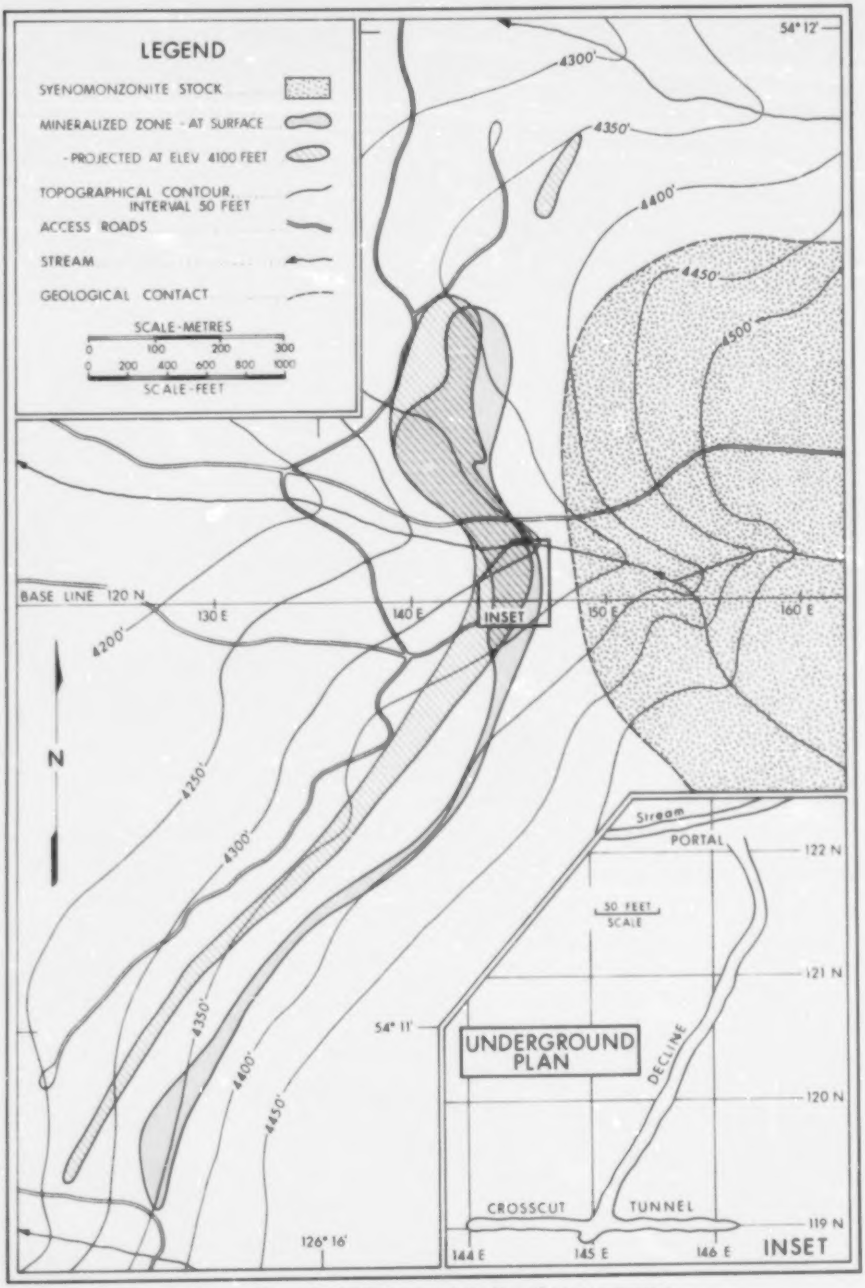

LEGEND
SYENOMONZONITE STOCK
MINERALIZED ZONE - AT SURFACE
- PROJECTED AT ELEV. 4100 FEET
TOPOGRAPHICAL CONTOUR, INTERVAL 50 FEET
ACCESS ROADS
STREAM
GEOLOGICAL CONTACT
SCALE-METRES
0
100
200
300
0
200
400
600
800
1000
SCALE-FEET
4300'
4350'
4400'
4450'
4500'
54° 12'
BASE LINE 120 N
130 E
140 E
INSET
150 E
160 E
4200'
4250'
4300'
4350'
4400'
4450'
N
54° 11'
126° 16'
Stream
PORTAL
122 N
50 FEET SCALE
121 N
UNDERGROUND PLAN
DECLINE
120 N
CROSSCUT
TUNNEL
119 N
144 E
145 E
146 E
INSET

Figure 26. Geological map of the Sam Goosly property.

(93L/1W)

BUCK (Fig. D, No. 152)

LOCATION: Lat. 54° 09' Long. 126° 23' (93L/1W)
OMINECA M.D. Three miles southwest of Goosly Lake.
CLAIMS: BUCK 1 to 16.
OWNER: CANWEX EXPLORATIONS LTD., 518, 510 West Hastings Street, Vancouver.
DESCRIPTION: Part of the claim group is underlain by a small gabbroic stock of the Tertiary Goosly Lake intrusions.
WORK DONE: Geochemical soil survey, 560 samples.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, Preliminary Map No. 11.

SAM GOOSLY (93L-1) (Fig. D, No. 45)

By B. N. Church and J. F. Hutter

LOCATION: Lat. 54° 10' Long. 126° 16' (93L/1W)
OMINECA M.D. Twenty-one miles southeast of Houston and 3 miles east of Goosly Lake, at approximately 4,200 feet elevation.
CLAIMS: SG 1 to 52, 54, 56, 61 to 64, 66, SG 1 to 5 Fractions, TAN 1 to 7, T 1 to 41, 46 to 53, 66 to 199, 202 to 245, NET 1 to 3 Fractions, REV 2 to 15, GAUL 1 to 20.
OWNER: Kennco Explorations, (Western) Limited.
OPERATOR: EQUITY MINING CAPITAL LIMITED, 908, 1111 West Hastings Street, Vancouver.
METALS: Silver, copper, gold.
DESCRIPTION:

The property was visited twice by the writer during the year on June 20 and October 5. Prior to the first visit 28 new diamond-drill holes, totalling approximately 11,000 feet, had been completed by Equity Mining Capital Limited. Kennco Explorations, (Western) Limited had previously drilled 62 holes. Prior to the second visit, a decline and crosscut had just been completed to mine a bulk sample from near the centre of a proposed open pit (Fig. 26). The decline tunnel was driven in ore southeastward at an overall slope of about 15 per cent from the portal located on the discovery showing. It was advanced southeastward for about 40 feet to an elbow and then 320 feet southwestward to a crosscut. From the junction, the crosscut was driven about equal distances to the east and west, roughly 110 feet.

The host rock exposed along much of the excavation is a fine-grained light grey, massive dacite tuff of Mesozoic age. This has been brecciated in varying degree presumably during the intrusion of the nearby syenomonzonite stock. Aphanitic and feldspar porphyry dykes that emanate from the stock strike westerly directly across the decline tunnel.

Mineralization displayed along the tunnel consists of much disseminated fine-grained sulphides and lenses rich in chalcopyrite, pyrrhotite, and coarsely crystalline pyrite (Plate VIIIA) in which colloform textures are not uncommon. In places medium-grained pyrite is accompanied by magnetite and chalcopyrite (Plate VIIIB).

The following is a detailed log of the decline to water level, the crosscut and lower section of the decline being flooded at the time of visit. Distances are measured southerly from the portal:

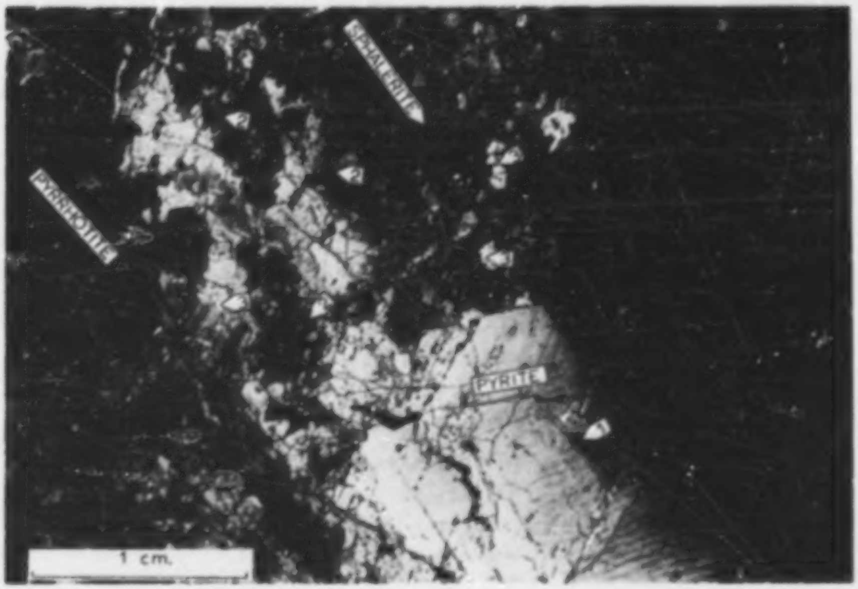

SPHALERITE
PYRRHOTITE
2
2
PYRITE
1 cm.

Plate VIIIA. Sam Goosly property, pyrite crystals with adhering colloform banded marcasite growths (2) and veinlets of pyrrhotite and chalcopyrite (1). Chalcopyrite also forms blebs in sphalerite, pyrrhotite, and mantles on small pyrite crystals (3).

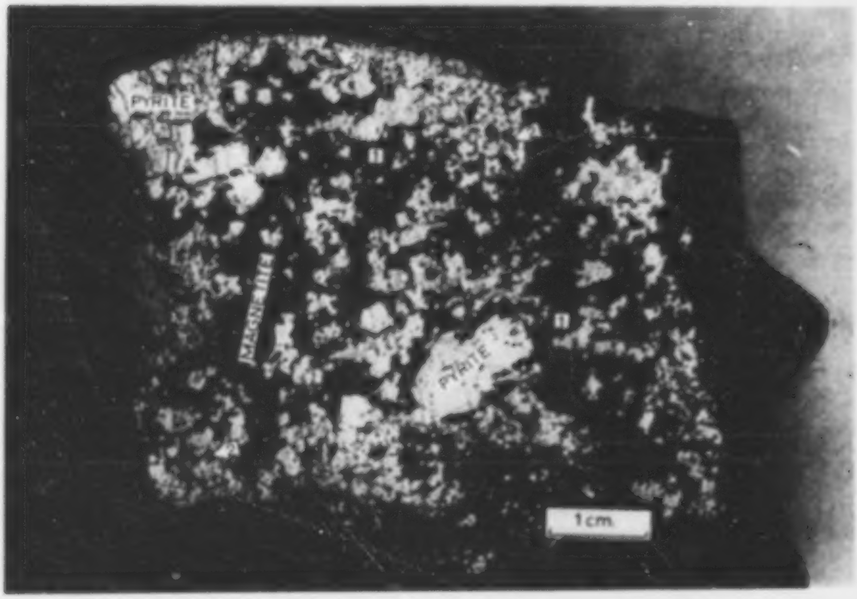

PYRITE
1
MAGNETITE
PYRITE
1
1cm

Plate VIIIB. Sam Goosly property, magnetite (1) interspersed among pyrite grains; chalcopyrite occurs as blebs associated with pyrite (2) and very fine blebs and disseminations in magnetite.

At the portal a 4-foot-wide bladed feldspar porphyry dyke striking about 070 degrees and dipping steeply cuts light grey dacitic tuff host rock which throughout contains some very fine disseminated sulphide.

Between 13 and 33 feet a lens enriched in chalcopyrite, pyrrhotite, and coarse pyrite is well exposed along the east wall. A few small patches of coarse sphalerite accompany the main sulphides and scorzalite is conspicuous in the adjacent tuff. A shear plane measured in this area strikes 120 degrees and dips 25 degrees northeast.

At 40 feet a 5-foot-wide bladed feldspar porphyry dyke striking 078 degrees and dipping steeply intersects the tunnel almost at right angles. A small seam of specularite penetrates the dyke.

At 51 feet a vertical shear with scattered pyrite strikes 075 degrees.

At 62 feet a quartz feldspar porphyry dyke striking 125 degrees and dipping 75 degrees southwest cuts a sulphide-rich lens. Chalcopyrite and pyrrhotite fill irregular cracks and interspaces between the breccia fragments; elsewhere fragments of the host rock are enveloped in mixtures of pyrrhotite, chalcopyrite, and coarse pyrite.

At 80 feet scattered, disseminated coarse sulphides and a few small lenses of massive sulphides occur in the light grey dacitic tuff host rock.

Between 101 and 136 feet a strongly mineralized lens appears along the roof of the decline.

At 145 feet the tuffaceous host rocks are severely fractured locally forming mosaic patterns of slightly dislodged and rotated breccia fragments. There is an abundance of disseminated sulphides and concentrations of pyrite, chalcopyrite, and pyrrhotite filling the interstices between the fragments and in little seams traversing the host rocks. Chlorite coatings are found on many fracture faces.

At 157 feet a light grey feldspar porphyry dyke about 6 feet wide strikes 095 degrees and dips 60 degrees southeast.

At 168 feet there is another display of mosaic breccia.

At 200 feet a coarse bladed feldspar porphyry dyke, about 5 feet wide, is accompanied by a fine-grained pulaskite dyke, about 3 feet wide; both dykes strike about 100 degrees and dip 70 degrees southerly. These are intruded into lenses of sulphides which occur to 230 feet. The dykes contain minor pyrite disseminations.

At 280 feet, immediately above the flooded portion of the tunnel, another bladed feldspar porphyry dyke, about 4 feet wide, intersects the tunnel striking about 070 degrees and dipping 70 degrees south.

WORK DONE:

Drilling to date on the property totals 85,186 feet in 158 holes. During the year diamond drilling included: 80 surface holes totalling 34,657 feet on SG 26, 28, 43 to 48, 66 and T 88 and 2 underground holes totalling 244 feet on SG 43. Almost all the 1973 drilling would be classified as definition work to define the limits of known ore zones.

The underground bulk sampling programme consisted of 369 feet of minus 20 per cent decline and 212 feet of crosscutting. The muck was sampled on a round by round basis. The grade of the rock excavated confirmed the reserve estimate in that particular part of the area.

The following surveys were conducted during the year: underground geological mapping, 1 inch equals 20 feet covering SG 45; VLF EM surveys, 2 line-miles covering SG 43-48 and 10 line-miles covering SG 15-18, 25-28, 49, 50, 52, 62, 64, 66; topographic mapping, 1 inch equals 200 feet covering all claims.

Metallurgical testing was carried out on a continuing basis. Engineering studies to cover plant design, access roads, and environmental impact were in progress.

A new 20-man complex was established and represented an up-grading of facilities rather than an expansion.

Two miles of new access roads was built and 1 mile of existing road was up-graded to all-weather standards.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 142-148; 1970, pp. 126, 127; 1971, pp. 168, 169; Ney, C. S., *et al.*, 1972, *C.I.M.*, Bull. 65, No. 723, pp. 53-64; Wojdak, P. J., 1974, unpublished M.Sc. thesis, *U.B.C.*, 116 pp.; Assessment Report 1683.

HDP **(Fig. D, No. 46)**

LOCATION: Lat. 54° 05′ Long. 126° 41′ (93L/2E)
OMINECA M.D. On Riddeck Creek, 2.5 miles east of Owen Lake.

CLAIMS: HDP 1 to 24, 26, 27, HDP 25 Fraction.

OWNER: CONQUEST EXPLORATION LTD., Box 352, Smithers.

WORK DONE: Geochemical soil survey, 82 samples taken on a 100 by 400-foot grid spacing.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 371; Assessment Report 4450.

SILVER QUEEN **(93L-2)** **(Fig. D, No. 106)** By J. F. Hutter

LOCATION: Lat. 54° 05′ Long. 126° 43.8′ (93L/2W)
OMINECA M.D. On the east side of Owen Lake, 21 miles due south of Houston.

CLAIMS: One hundred and forty-four claims and fractions, including 17 Crown-granted claims.

OWNERS: Seventeen Crown-granted claims owned by Canex Placer Limited and 127 located claims owned by Nadina Explorations Limited.

OPERATOR: BRADINA JOINT VENTURE, 1005, Two Bentall Centre, Vancouver.

METALS: Gold, silver, copper, lead, zinc, cadmium (production shown on Table I).

DESCRIPTION: The geology, exploration, and development history of the Silver Queen mine has been reviewed in detail in *Geology, Exploration, and Mining in British Columbia,* 1969 and 1970.

(93L/2W)

WORK DONE:

The mine operated from 1 January 1973 to 12 September 1973, at which time operations were suspended.

Underground development work comprised 624 feet of drifting, 1,887 feet of subdrifting, and 1,913 feet of raising. Ore broken underground amounted to 59,976 tons.

Several stoping methods were investigated with varying degrees of success. I found conditions generally did not allow open stull stoping. Open square sets were found to provide adequate ground support and were used where fill was not available. Cut and fill stoping using pit-run gravel was selected as the most promising method and at the cessation of operation plans were underway to convert to this method wherever possible.

No major construction was undertaken during the year. The mine dry was destroyed by fire in March 1973 and temporary facilities were in use thereafter. New kitchen facilities and two 20-man bunkhouses were added to the camp in an effort to attract more miners.

A surface diamond-drill programme was completed early in the year, directed primarily at filling in information on the No. 3 vein structure. A total of 8,083 feet was drilled in 32 holes.

An underground diamond-drill programme checked for extensions of known ore and was also directed at investigating parallel structures; 4,157 feet was drilled in 43 holes.

The work force averaged 120 to 140 men during the year.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 370.

VERN (Fig. D, No. 131)

LOCATION: Lat. 54° 12' Long. 126° 51' (93L/2W)
OMINECA M.D. One and one-half mile northeast of Owen Hill, straddling Owen Creek.
CLAIMS: VERN 1 to 6.
OWNER: MAHARAJA MINERALS, LIMITED, 1102, 207 West Hastings Street, Vancouver V6B 1H7.
WORK DONE: Linecutting and magnetometer survey, 0.6 line-mile; geochemical survey, 39 soil samples taken at 100 by 200-foot grid spacing and 9 silt samples taken along Owen Creek.
REFERENCE: Assessment Report 4807.

HAGAS (93L-221) (Fig. D, No. 47)

LOCATION: Lat. 54° 09' Long. 126° 59' (93L/3E)
OMINECA M.D. Seven miles west of Tsalit Mountain, 2 miles south of Morice River, at approximately 3,000 feet elevation.
CLAIMS: HAGAS 1 to 37, HR 1 to 10.
OWNER: John M. McAndrew.
OPERATOR: PERRY, KNOX, KAUFMAN, INC., Box 14336, Spokane, Washington.
METALS: Zinc, copper.
DESCRIPTION: Several minor showings of zinc and copper-bearing mineralization are found associated with fracturing in Hazelton Group volcanic rocks.

(93L/4E)

WORK DONE: EM survey, 2.4 line-miles covering Hagas 3-6, 14, 16, 18; surface diamond drilling, two holes totalling 605 feet on Hagas 6 and 16.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 379; Assessment Report 4194.

RD (93E-83) (Fig. D, no. 38)

LOCATION: Lat. 53° 59′ Long. 127° 34′ (93E/13E; 93L/4E)
Report on this property in section 93E/13E.

TOM (93L-68) (Fig. D, No. 135)

LOCATION: Lat. 54° 29′ Long. 127° 28′ (93L/6W, 5E)
OMINECA M.D. South slope of Scallon Valley, 3 miles east of Eagle Peak.

CLAIMS: TOM 1 to 18, TK 19 to 24.

OWNER: MAHARAJA MINERALS, LIMITED, 1102, 207 West Hastings Street, Vancouver V6B 1H7.

METAL: Copper.

DESCRIPTION: Hazelton Group reddish to maroon andesite is intruded by green andesite dykes. Copper mineralization occurs as irregular lenses and pockets in quartz veins and dry fractures in eight of the dykes and in two shear zones in the volcanic rocks. It consists of chalcopyrite, bornite, chalcocite, malachite, and azurite accompanied by pyrite and specularite.

WORK DONE: Transit-stadia location of mineral occurrences; four chip and three grab samples taken covering Tom 1-4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 382; Assessment Report 4812.

ROCK (93L-161) (Fig. D, No. 48)

LOCATION: Lat. 54° 23′ Long. 127° 13′ (93L/6E)
OMINECA M.D. At the headwaters of Loljuh Creek.

CLAIMS: ROCK 107 to 114, 134, 135, ROCK 1 Fraction.

OWNER: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver V6E 1M4.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite, bornite, and molybdenite occur as disseminations and fracture fillings in both granodiorite and intruded Hazelton Group volcanic rocks.

WORK DONE: 1972 – IP survey, 6 line-miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 383; Assessment Report 4289.

RUDY (93L-227) (Fig. D, No. 136)

LOCATION: Lat. 54° 25′ Long. 127° 09′ (93L/6E)
OMINECA M.D. On Houston Tommy Creek, 20 miles due west of Houston.

CLAIMS: RUDY 1 to 8.

OWNER: MAHARAJA MINERALS, LIMITED, 1102, 207 West Hastings Street, Vancouver V6B 1H7.

METALS: Copper, silver, zinc.

DESCRIPTION: The claims are underlain by Hazelton Group andesite and rhyolite, which to the south are intruded by diorite. A shear zone on Rudy 1 is exposed over an area of 3 feet by 8 feet and carried abundant bornite. A quartz vein on Rudy 2 is 6 inches thick and carries sphalerite, chalcopyrite, and tetrahedrite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; eight rock samples taken covering Rudy 1-4.

REFERENCE: Assessment Report 4890.

PETE (93L-228) (Fig. D, No. 137)

LOCATION: Lat. 54° 25′ Long. 127° 10′ (93L/6E)
OMINECA M.D. Between the headwaters of Houston Tommy Creek and Denys Creek.

CLAIMS: PETE 1 to 8.

OWNER: MAHARAJA MINERALS, LIMITED, 1102, 207 West Hastings Street, Vancouver V6B 1H7.

METALS: Copper, silver.

DESCRIPTION: A feldspar porphyry dyke or sill has been intruded along the contact between red and green andesite of the Hazelton Group. The dyke has been injected by two quartz veins parallel to the dyke walls. The veins are 1 to 3 feet wide and carry chalcopyrite, bornite, malachite, azurite, and locally pyrite and minor galena. A 6-inch shear zone in the green andesite is mineralized with pyrite, chalcopyrite, bornite, and malachite.

WORK DONE: Reconnaissance surface geological mapping, 1 inch equals 400 feet covering Pete 1-4.

REFERENCE: Assessment Report 4891.

DOME (93L-49) (Fig. D, No. 132)

LOCATION: Lat. 54° 26′ Long. 127° 11′ (93L/6E)
OMINECA M.D. Headwaters of Denys Creek, 22 miles west-northwest of Houston.

CLAIMS: DOME 1 to 17, DOMINION 1 and 2, SEE 1 to 7, NEE 1 to 7.

OWNER: MAHARAJA MINERALS, LIMITED, 1102, 207 West Hastings Street, Vancouver V6B 1H7.

METALS: Copper, lead.

(93L/8W)

DESCRIPTION: Hazelton Group andesite has been altered to chlorite, tremolite, and epidote. Quartz, chalcopyrite, bornite, and specularite are disseminated through the altered rock and also occur as veins and lenses. The mineralized rock has been extensively replaced by white carbonate.

WORK DONE: A mineralized outcrop, 0.2 acre in area, was outlined by planetable-stadia survey at 1 inch equals 20 feet; 25 chip samples were taken covering Dominion 1 and Dome 6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 83; Assessment Report 4813.

SWAN (Fig. D, No. 107)

LOCATION: Lat. 54° 26' Long. 126° 22' (93L/8W)
OMINECA M.D. Eight miles southeast of Topley, at approximately 4,000 feet elevation.

CLAIMS: SWAN 1 to 80.

OWNERS: J. W. Murton and A. Clark.

OPERATOR: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

DESCRIPTION: The claims are underlain by Goosly Lake and Buck Creek volcanic rocks, including basalts, rhyolites, and andesites.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; linecutting, 29 miles of grid; geochemical soil survey, 280 samples taken at 400 by 1,400-foot grid spacing covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* Preliminary Map No. 11; Assessment Report 4762.

JILL (Fig. D, No. 49)

LOCATION: Lat. 54° 45' Long. 126° 14' (93L/9E, 16E)
OMINECA M.D. Southwest of Topley Landing.

CLAIMS: JILL 1 to 60, JILL 1 to 23 Fractions.

OWNER: Evergreen Explorations Ltd.

OPERATORS: COBRE EXPLORATION LIMITED and TWIN PEAK RESOURCES LTD., 5424 Halifax Street, Burnaby.

WORK DONE: 1972 – airborne magnetometer survey, 65 line-miles.

REFERENCES: Assessment Reports 2050, 4427.

JACK-RABBIT (SAW) (93L-19) (Fig. D, No. 51)

LOCATION: Lat. 54° 34' Long. 126° 24' (93L/9W)
OMINECA M.D. Three miles northeast of Perow, on Johnny David Creek, at approximately 2,700 feet elevation.

CLAIMS: SAW 1 to 34.

OWNER: PHELPS DODGE CORPORATION OF CANADA, LIMITED, 404, 1112 West Pender Street, Vancouver V6E 2S1.

METALS: Copper, gold, silver.

(93L/9W)

DESCRIPTION: Chalcopyrite, pyrite, and minor magnetite occur in a northwest-trending quartz feldspar porphyry dyke and in an adjacent fault cutting epidotized Hazelton Group volcanic rocks. The area is one of very limited outcrop.

WORK DONE: Surface geological mapping, 1 inch equals 50 feet and ground magnetometer survey, 4 line-miles covering Saw 1-34; linecutting on Saw 1-4.

REFERENCE: Assessment Report 4760.

RED TOP (93L-16, 18) (Fig. D, No. 50)

LOCATION: Lat. 54° 37′ Long. 126° 17′ (93L/9W)
OMINECA M.D. Eight miles north of Topley, just east of the Topley-Granisle road, at approximately 3,600 feet elevation.

CLAIMS: SUMMIT 1 to 14, 21 to 47, SUMMIT 1 to 8 Fractions, LANA 11 to 20, 23 to 26, 36, 77, 78, 159, 161, 165 to 173, CLEO 1 to 4, 9 to 14, 19 to 22, ZIG 1 to 4, ZAG 1 to 5, MIKE 1 to 16, PETE 1 and 2, CRIS 1 to 79, CRIS 1 to 6 Fractions.

OWNER: Topley Joint Venture.

OPERATOR: DUCANEX RESOURCES LIMITED. 312, 409 Granville Street, Vancouver.

METALS: Molybdenum, copper.

DESCRIPTION: Granitic rocks of the Topley intrusions are in contact with sedimentary and volcanic rocks of Upper Triassic or older age. The area is largely devoid of outcrop. Molybdenite and minor chalcopyrite occur in K-feldspar-rimmed veinlets and fractures in Topley granitic rocks. Minor chalcopyrite and pyrite were encountered in basic volcanic rocks during percussion drilling.

WORK DONE: Percussion drilling, 10 holes totalling 2,520 feet on Cris 38, 41, 45, 46, Cleo 19, and Summit 44.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 394.

LAY (Fig. D, No. 109)

LOCATION: Lat. 54° 39′ Long. 126° 21′ (93L/9W)
OMINECA M.D. Approximately 20 miles northeast of Houston, 1.5 miles east of Findlay Lake.

CLAIMS: LAY 1 to 56.

OWNER: AMOCO CANADA PETROLEUM COMPANY LTD., Mining Division, 2160, 1055 West Hastings Street, Vancouver V6E 2E9.

DESCRIPTION: Overburden obscures all bedrock on the property.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; ground magnetometer survey, 30 line-miles; IP survey, 14.4 line-miles; geochemical soil survey, 636 samples covering all claims.

FIND (Fig. D, No. 110)

LOCATION: Lat. 54° 40' Long. 126° 19' (93L/9W)
OMINECA M.D. Approximately 25 miles northeast of Houston, 2 miles west of Baboon Lake.

CLAIMS: FIND 1 to 56.

OWNER: AMOCO CANADA PETROLEUM COMPANY LTD., Mining Division, 2160, 1055 West Hastings Street, Vancouver V6E 2E9.

DESCRIPTION: Two outcrops were found including an andesitic volcanic rock and a fine-grained intrusive rock.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; ground magnetometer survey, 14 line-miles; IP survey, 14 line-miles; geochemical soil survey, 162 samples covering Find 6-14 and 19-48.

THEZAR (93L-190, 191) (Fig. D, No. 25)

LOCATION: Lat. 54° 45' Long. 126° 19' (93L/9W, 16W)
OMINECA M.D. Seventeen miles north of Topley, at approximately 3,000 feet elevation.

CLAIMS: THEZAR 1 to 132.

OWNER: AMAX POTASH LIMITED, 601, 535 Thurlow Street, Vancouver V6E 3L6.

METAL: Copper.

DESCRIPTION: A small elliptical quartz-hornblende-biotite feldspar porphyry stock intrudes Hazelton Group volcanic rocks. Chalcopyrite occurs in fractures near the stock contacts in both the intrusive and volcanic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and geochemical soil survey, 201 samples covering Thezar 25-35, 47-51, 53, 55, 69-72, 87, and 91; percussion drilling, 44 holes totalling 11,360 feet on Thezar 52, 54, 56, 71-77, 79-82; road construction, 1 mile (access to drill sites).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 395, 396.

FLY (Fig. D, No. 108)

LOCATION: Lat. 54° 46' Long. 126° 21' (93L/9W, 16W)
OMINECA M.D. Ten miles southwest of Topley Landing, at approximately 3,000 feet elevation.

CLAIMS: FLY 1 to 196.

OWNER: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

DESCRIPTION: Hazelton Group sedimentary and volcanic rocks are intruded by an elliptical stock of quartz-hornblende-biotite feldspar porphyry of Late Cretaceous age.

WORK DONE: IP survey, 10 line-miles covering Fly 1-20.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 396; Preliminary Map No. 12.

DAY (Fig. D, No. 153)

LOCATION: Lat. 54° 31′ Long. 126° 45′ (93L/10)
OMINECA M.D. Approximately 9 miles north 25 degrees west of Houston, at Fishpan Lake, at about 2,800 feet elevation.

CLAIMS: DAY 1 to 22, 33, 34, 43 to 75.

OWNER: BETHLEHEM COPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver V6E 2H8.

DESCRIPTION: One percussion hole was abandoned in overburden at a depth of 250 feet.

WORK DONE: Percussion drilling, one hole totalling 250 feet on Day 59.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 417.

SUMMIT (93L-223) (Fig. D, No. 52)

LOCATION: Lat. 54° 43′ Long. 126° 45′ (93L/10W)
OMINECA M.D. At Burbridge Lake, 12 miles east of Telkwa, at approximately 4,000 feet elevation.

CLAIMS: SUMMIT 1 to 8, 13 to 16, HB 1 to 23, HB 1 to 5 Fractions.

OWNER: M. H. Chapman.

OPERATOR: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver V7P 2R4.

METAL: Copper.

DESCRIPTION: Pyrite, chalcopyrite, and malachite are contained in quartz veinlets which cut a leucocratic schistose quartz porphyry. The rock has a distinct cataclastic texture in which streaks of sericite wrap around deformed quartz crystals. A grey-green microdiorite stock intrudes volcanic rocks near the principal showings.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet; magnetometer survey, 10.5 line-miles; geochemical soil survey, 225 samples covering most of the claims; surface diamond drilling, three holes totalling 1,200 feet on Summit 1, 2, and 7.

CRATER (93L-39) (Fig. D, No. 138)

LOCATION: Lat. 54° 31′ Long. 127° 08′ (93L/11E)
OMINECA M.D. Loring Creek-Crater Lake area, approximately 20 miles south of Telkwa.

CLAIMS: CRATER 9 to 18, MARMOT 5 to 14, WEBSTER 1 to 4, HANKIN 17 to 26.

OWNER: MAHARAJA MINERALS, LIMITED, 1102, 207 West Hastings Street, Vancouver V6B 1H7.

METALS: Copper, silver.

DESCRIPTION: Hazelton Group andesites and rhyodacites are broadly folded about an anticlinal axis through Crater Lake. On the ridge between the lake and Webster Creek a flow of propylitized green andesite overlies red andesite and is mineralized in the basal 50 to 80 feet. Chalcocite, malachite, bornite, chalcopyrite, azurite, pyrite, tetrahedrite, and hematite are disseminated through the rock. They are more abundant in a crevice in the side of a draw in the bluff overlooking Webster Creek.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; chip sampling across 100 feet of section covering Crater 9-12 and Marmot 8, 10; surface geological mapping, 1 inch equals 20 feet; 22 channel samples taken covering Hankin 23, 24.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* Preliminary Map No. 69-1; Assessment Reports 4811, 4831.

HUBERT (93L-226) (Fig. D, No. 133)

LOCATION: Lat. 54° 38′ Long. 127° 01′ (93L/11E)
OMINECA M.D. Approximately 16 miles southeast of Smithers, Hubert Creek area.

CLAIMS: HUBERT 1 to 4, JIM 1 to 8, TEX 1 to 10, BEV 1 to 10.

OWNER: MAHARAJA MINERALS, LIMITED, 1102, 207 West Hastings Street, Vancouver V6B 1H7.

METALS: Copper, silver.

WORK DONE: Linecutting and magnetometer survey, 2.5 line-miles; geochemical survey, 130 soil samples taken at 100-foot intervals along four reconnaissance lines and 12 silt samples taken along Hubert Creek covering Hubert 1-4, Tex 6, and Bev 1, 3, 4, 9.

REFERENCE: Assessment Report 4808.

NH (93L-82) (Fig. D, No. 134)

LOCATION: Lat. 54° 44′ Long. 127° 43′ (93L/12E)
OMINECA M.D. Twenty-two miles west of Smithers and approximately 6 miles southwest of McDonnell Lake.

CLAIMS: AB, EL, BD, JB, RB, totalling approximately 150.

OWNER: M. J. Beley.

OPERATOR: GRANDORA EXPLORATIONS LTD., 201, 846 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain by Hazelton Group andesite lavas and tuffs. Narrow fracture fillings and replacement zones of chalcocite, bornite, chalcopyrite, and malachite occur along a northwest-striking and a north-striking shear zone.

WORK DONE: Surface geological mapping of the showing area, 1 inch equals 50 feet; linecutting, 4 miles of grid; geochemical soil survey, 60 samples taken at 200-foot intervals.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1968, pp. 121-124; Assessment Report 4671.

GLACIER GULCH MOLYBDENUM (93L-110) (Fig. D, No. 53)

By J. F. Hutter

LOCATION: Lat. 54° 49' Long. 127° 18' (93L/14W)
OMINECA M.D. Glacier Gulch, east side of Hudson Bay Mountain, 5 miles northwest of Smithers, between 2,000 and 7,000 feet elevation.

CLAIMS: Mineral Leases M-8 and M-81 to M-85, and 252 located claims comprising C, D, E, F, H, JAY, J, K, L, M, R, S, T, EX, EXTENSION, and Y.

OWNER: CLIMAX MOLYBDENUM CORPORATION OF BRITISH COLUMBIA, LIMITED, 601, 535 Thurlow Street, Vancouver; field address, Box 696, Smithers; D. Davidson, manager.

METALS: Molybdenum, tungsten.

DESCRIPTION: Strongly altered granodiorite is cut by numerous dykes of fine-grained aplite and quartz porphyry and lamprophyre. Molybdenite and scheelite are contained in a stockwork of quartz veinlets.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering M, H, and Lots 7264 and 7266; underground diamond drilling, five holes totalling 7,341 feet; diamond drill holes surveyed.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1966, pp. 86-90; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 419; Assessment Reports 4756, 4871.

REISETER (93L-134) (Fig. D, No. 9)

LOCATION: Lat. 54° 55' Long. 127° 10' (93L/14E)
OMINECA M.D. On Reiseter Creek, 9 miles north of Smithers.

CLAIMS: REISETER 1 to 24.

OWNER: CHANNEL COPPER MINES LIMITED, 248 Second Avenue, Kamloops.

METALS: Antimony, copper, molybdenum.

DESCRIPTION: Several parallel, north-northeast-striking quartz-carbonate-sulphide veins cut argillaceous sedimentary rocks. Stibnite is the principal sulphide mineral and 21 tons of ore from one vein was mined in 1970. Southeast of the antimony-bearing veins, several dykes of quartz feldspar porphyry containing minor chalcopyrite and molybdenite intrude argillaceous siltstones.

WORK DONE: Geological, geochemical, and magnetometer surveys were carried out in the vicinity of known copper and molybdenum mineralization.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, pp. 162, 163; Assessment Report 4478.

CRONIN MINE (93L-127) (Fig. D, No. 111)

By J. F. Hutter

LOCATION: Lat. 54° 55.3 Long. 126° 48.5' (93L/15W)
OMINECA M.D. On the east slope of Mount Cronin, near Cronin Creek, at approximately 5,200 feet elevation.

(93L/15W)

CLAIMS: SUNFLOWER FR. (Lot 7417), SUNFLOWER (Lot 7418), HOMESTAKE (Lot 1859A), BONANZA (Lot 1860A), EUREKA (Lot 1861A), LUCKY STRIKE (Lot 1862A), BABINE CHIEF (Lot 1863A), BULKLEY PIONEER (Lot 1864A), JIM FR., KW 1 to 3, SUNRISE 7, DEL 1 to 12, VIEW 1 to 8, MILL 1 and 2.

OWNER: HALLMARK RESOURCES LTD., 221 – 12th Street, New Westminster; Egil Livgard, mine manager.

METALS: Lead, zinc, gold, silver cadmium, bismuth (production shown on Table I).

DESCRIPTION: The mineral occurrence is related to a stock-like body of rhyolite at its contact with adjacent volcanic and sedimentary rocks. The mineralization consists of sphalerite and galena with relatively minor pyrite, either in quartz veins or in massive veins, breccia zones, or fracture fillings in the rhyolite with little quartz. The major veins strike southwest-northeast and dip 45 to 65 degrees northwest. The silver values are associated primarily with the lead.

WORK DONE:

This property was reopened in 1973 under the management of Hallmark Resources Ltd. During previous operations over a period of 20 years the mine has been developed to include approximately 3,800 feet of drift and crosscuts plus approximately 1,200 feet of raises. During this period mining has been carried on almost continuously on a small scale. The present operators report that prior to their acquisition approximately 25,000 tons, grading 12.52 ounces silver, 7.11 per cent lead, and 8.12 per cent zinc, had been extracted.

The mining method used currently is conventional shrinkage stoping using stopers or air legs and battery locomotive haulage.

Production started in late August and about 2,000 tons of ore was treated in the mill with 1,300 tons of broken ore remaining in the stopes and dumps at the cessation of this year's operations.

The present mill is rated at 35 tons per day capacity and uses a two product flotation process producing a lead concentrate and a zinc concentrate. Shipment is by truck to Smithers and rail cars for transport to the Cominco smelter at Trail.

Work during 1973 involved the construction of a tailings disposal area, a modular camp facility, and some improvements to the access road between the mine and the Smithers Landing road. The mill received extensive rehabilitation work and an additional 150-horsepower diesel power unit was added plus an extra bank of Denver flotation cells.

Surface exploration work exposed two new veins. One of these veins is reported to exceed 10 feet in width.

The Bonanza and Homestake claims were geologically mapped at a scale of 1 inch equals 40 feet and a geochemical soil survey was conducted on the KW 3 and Mill 2 claims. Underground work on the Bonanza claim totalled 150 feet.

Between 12 and 17 men were employed during the summer months.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 420, 421.

FULL (Fig. D, No. 56)

LOCATION: Lat. 54° 52′ Long. 126° 20′ (93L/16W)
OMINECA M.D. One mile north of Fulton Lake, west of Babine Lake.

CLAIMS: FULL 1 to 48.

OWNER: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver.

DESCRIPTION: The area of the claims is devoid of outcrop but is believed to be underlain by Lower Jurassic fragmental volcanic rocks.

WORK DONE: Frequency-domain IP survey and linecutting covering Full 5-20, 22, 27-37, and 39-45.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 422; Assessment Report 4704.

ROJO (Fig. D, No. 55)

LOCATION: Lat. 54° 52′ Long. 126° 24′ (93L/16W)
OMINECA M.D. Ten miles west of Babine Lake and 2 miles north of Fulton Lake.

CLAIMS: ROJO 1 to 24.

OWNER: W. R. Bacon.

OPERATOR: LUC SYNDICATE, 1720, 1055 West Hastings Street, Vancouver.

DESCRIPTION: The area of the claims is underlain by fragmental volcanic rocks and argillaceous and graphitic siltstones of the Hazelton Group. Outcrop is sparse.

WORK DONE: Frequency-domain IP survey, 9.7 line-miles; magnetometer survey, 1.4 line-miles and 11.6 miles of linecutting covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, Preliminary Map No. 12; Assessment Report 4575.

SAT (93L-224) (Fig. D, No. 113)

LOCATION: Lat. 54° 53′ Long. 126° 25′ (93L/16W)
OMINECA M.D. About 30 miles northeast of Smithers, north of Fulton Lake.

CLAIMS: SAT 1 to 83, 92 to 332, M 1 to 44, O 1 to 15, R 1 to 10, W 1 to 35.

OWNER: AMOCO CANADA PETROLEUM COMPANY LTD., Mining Division, 2160, 1055 West Hastings Street, Vancouver V6E 2E9.

METALS: Copper, molybdenum.

DESCRIPTION: The property is underlain by a sequence of sedimentary and volcanic rocks which has been intruded by biotite and/or hornblende feldspar intrusions. Chalcopyrite and minor molybdenite occur in fractures in the intrusive rocks.

WORK DONE: Magnetometer survey, 12 line-miles and IP survey, 12 line-miles covering M claims; geochemical soil survey, 460 samples covering selected areas on the Sat claims; surface diamond drilling, five holes totalling 1,899 feet on O 1, R 10, W 15, and W 17; road construction (between drill camp and diamond-drill holes).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 422.

TACHI (93L-144) (Fig. D, No. 10)

LOCATION: Lat. 54° 45′ Long. 126° 11′ (93L/16E, 9E)
OMINECA M.D. Four miles south-southwest of Topley Landing, along the Topley-Babine Lake road at approximately 3,000 feet elevation.

CLAIMS: TACHI 1 to 16, 18, 20, 47, 49, 51, 53, 55, 57 to 64, TAK 10 to 44, TAK 1 to 16 Fractions.

OWNER: Ralph R. Keefe.

OPERATOR: PERRY, KNOX, KAUFMAN, INC., Box 14336, Spokanc, Washington.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite and molybdenite occur in fractures within and adjacent to quartz-hornblende-biotite feldspar porphyry dykes cutting Topley granitic rocks.

WORK DONE: Linecutting; time-domain IP survey, 7 line-miles covering Tachi 1, 2, 4, 13-16, 18, 20, Tak 16-18, 36-44, and Tak 7, 10-14 Fractions; surface diamond drilling, three holes totalling 1,000 feet on Tak 43 and 44 and Tak 14 Fraction; road construction, 0.8 mile on Tak 16, 17, 29, 43, and 44.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 115-117; 1970, p. 157; Assessment Report 4479.

PRO (93L-225) (Fig. D, No. 114)

LOCATION: Lat. 54° 46′ Long. 126° 11′ (93L/16E)
OMINECA M.D. Three miles southwest of Topley Landing.

CLAIMS: PRO 1 to 22, 27 to 52, 57 to 64, 83 to 88, PRO 1 Fraction, FIT 1 to 22, FIT 1 and 2 Fractions, ANNY 1 to 6.

OWNER: AMOCO CANADA PETROLEUM COMPANY LTD., Mining Division, 2160, 1055 West Hastings Street, Vancouver V6E 2E9.

METALS: Copper, molybdenum.

DESCRIPTION: Andesitic pyroclastic rocks and argillaceous and siliceous sedimentary rocks are intruded by diorite and quartz monzonite of the Topley intrusions. Traces of chalcopyrite and molybdenite were found during the drill programme.

WORK DONE: Surface geological mapping, 1 inch equals one-half mile; ground magnetometer survey, 11.4 line-miles and IP survey, 13.63 line-miles covering Pro 1-18, 20, 22, 27-32, 34, 36, 38, 40, 59, 61, 63, Pro 1 Fraction, and Fit 11, 13, 15, 17; geochemical soil survey, 62 samples covering Pro 1-6, 12, 14, 16, 18, 31, 32 and Pro 1 Fraction; surface diamond drilling, three holes totalling 1,642 feet on Pro 1 and 3.

GRANISLE MINE (93L-146) (Fig. D, No. 112)

By J. F. Hutter

LOCATION: Lat. 54° 56.5' Long. 126° 09.5' (93L/16E)
OMINECA M.D. On McDonald Island, 10 miles north of Topley Landing.

CLAIMS: BEA 1 to 6 (Lots 7665, 7666, 7670 to 7672, 7679), ARLEN 1 to 4 (Lots 7673, 7664, 7663, 7668), BLACK BEAR 1 to 3 (Lots 7662, 7661, 7667), COON 1 (Lot 7686), DEER FR. (Lot 7674), COON FR. (Lot 7684), ELK (Lot 7675), FOX (Lot 7676), LAKE 1 and 2 (Lots 7682, 7683), LYNX FR. (Lot 7678), MOUSE FR. (Lot 7680), NORA 1 to 5 (Lots 7656 to 7660), NORA 6 FR. (Lot 7669), OTTER 1 and 2 (Lots 7685, 7681), WOLF FR. (Lot 7677) Crown-granted claims and 125 located claims.

OWNER: GRANISLE COPPER LIMITED, 2000, 1055 West Hastings Street, Vancouver V6E 2H7; mine office, Granisle; E. M. Bertheisen, mine manager.

METAL: Copper (production shown on Table I).

DESCRIPTION: Copper mineralization is associated with a dyke-like body of biotite feldspar porphyry. The economic minerals are chalcopyrite and bornite with minor gold and silver. A pyrite halo is peripheral to the copper orebody.

WORK DONE:

Open-pit mining continued during the year and the majority of the 7,208,261 tons of waste removed was hauled to the No. 2 dam causeway.

Reseeded tailings areas are developing a good cover of vegetation.

Construction activities for the year consisted of an administration office extension, roof coverings over the concentrate weigh-scale and grinding ball bin, plus modifications to the crusher dust control system.

An average of 300 to 310 people is employed at the mine.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 178-183; 1972, p. 425.

BAB (93M-127), R (93L-220) (Fig. D, No. 54)

LOCATION: Lat. 55° 00' Long. 125° 15' (93M/1; 93L/16E)
Report on this property in section 93M/1.

BELL MINE (NEWMAN) (93M-1) (Fig. D, No. 115)

LOCATION: Lat. 55° 00' Long. 126° 14' (93M/1E; 93L/16E)
Report on this property in section 93M/1E.

HAZELTON 93M

BAB (93M-127), R (93L-220) (Fig. D, No. 54)

LOCATION: Lat. 55° 00′ Long. 126° 15′ (93M/1; 93L/16E)
OMINECA M.D. BAB – surrounding the northeast arm of Babine Lake, from Morrison Creek south; R – 1.5 miles east-northeast of Hawthorn Bay, Babine Lake.

CLAIMS: 93M/1 – BAB (62 claims), NED (19 claims), SHO 1 and 2, 13, 17 to 20, N 1 to 92, IDC 1 to 14, TONJA 1 to 135, K Fraction; 93L/16E – R (approximately 235 claims), RR 1 to 90, 101 to 211, 359, 360.

OWNER: QUINTANA MINERALS CORPORATION, 1215, Two Bentall Centre, Vancouver.

METAL: Copper.

DESCRIPTION: The area is underlain by dense black argillites, light to grey banded argillaceous siltstones, and andesites, tuffs, and breccias of the Hazelton Group. These have been intruded by dykes and stocks of diorite.

WORK DONE: IP survey, 15 line-miles covering some of the Tonja and R claims and the RR claims; percussion drilling, five holes totalling 1,000 feet on R 119, 192, 195, 207, and 210.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 425; Assessment Report 4249, 4250, 4426.

BELL MINE (NEWMAN) (93M-1) (Fig. D, No. 115)

By J. F. Hutter

LOCATION: Lat. 55° 00′ Long. 126° 14′ (93M/1E; 93L/16E)
OMINECA M.D. At the north end of Newman Peninsula, on Babine Lake.

CLAIMS: Mineral Leases M-134 and M-135 plus 98 mineral claims and fractions, including NEWMAN, LINDA, LAD.

OWNER: NORANDA MINES, LIMITED, Bell Copper Division, Box 2000, Granisle; W. A. Allan, mine manager.

METAL: Copper (production shown on Table I).

DESCRIPTION: Chalcopyrite and chalcocite with peripheral pyrite, pyrrhotite, and some sphalerite are associated with a stock-like body of biotite feldspar porphyry. This porphyry intrudes sedimentary and fragmental volcanic rocks.

WORK DONE:

The open pit worked a three-shift-per-day, five-day-per-week schedule. The mill operated on a continuous basis and throughput averaged 11,270 tons per day. Copper concentrate was trucked to Topley and transferred to railway cars for shipment to smelter.

Major open-pit equipment consisted of one Bucyrus-Erie 45-R electric drill, two P&H 1600 electric shovels, ten Terex 65-ton trucks, one Caterpillar 992 loader, two Caterpillar D-8 dozers, one Caterpillar 824-B wheel dozer, and one Caterpillar 14-E grader.

During 1973, construction and installation of additional facilities at the minesite included an AN/FO storage silo, an oil storage building, an extension to the concentrate storage shed, a covered, truck weigh-scale, power lines to the tailings-dam seepage pond and the bubbler system, installation of an electric pump at the seepage pond, installation of an electric compressor on the bubbler system, and installation of a rock grapple at the primary crusher.

At year-end the number of employees totalled 76 staff and 144 hourly rated. Ten additional houses and a 10-unit row house were under construction in the village of Granisle where accommodation is available for all employees.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1965, pp. 99-102; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 114; 1970, p. 170; 1971, pp. 185, 186; 1972, p. 426.

OFF, RAID, DDT (93M-4) (Fig. D, No. 58)

LOCATION: Lat. 55° 04' Long. 126° 20' (93M/1W)
OMINECA M.D. North and east of the Indian Reserve near Old Fort, at approximately 3,000 feet elevation.

CLAIMS: OFF 1 to 8, 15 to 18, RAID 1 to 14, DDT 5 to 14, 19 to 40.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METAL: Copper.

DESCRIPTION: Chalcopyrite and minor molybdenite occur in fractures in quartz monzonite and biotite feldspar porphyry which have intruded an older, fine-grained, magnetic quartz diorite stock.

WORK DONE: Helicopter-borne magnetometer and EM survey at line spacing of 660 feet and ground clearance of 200 feet over approximately 8 square miles covering Off 1-8, 15-18, Raid 1-14, and DDT 5-14, 19-40.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1966, pp. 92-95; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 428; Preliminary Map No. 12; Assessment Report 4486.

FORT (93M-144) (Fig. D, No. 57)

LOCATION: Lat. 55° 05' Long. 126° 25' (93M/1W)
OMINECA M.D. Northern Babine Lake area, northwest of the peak of Old Fort Mountain, at approximately 3,500 feet elevation.

CLAIMS: FORT 1 to 44.

OWNER: W. R. Bacon.

OPERATOR: LUC SYNDICATE, 1720, 1055 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Interbedded sedimentary and volcanic rocks have been folded into a synclinal structure about a westerly trending axis. These rocks have been intruded by small quartz diorite stocks which in turn are intruded by narrow dykes of quartz monzonite and biotite feldspar porphyry. Minor pyrite and chalcopyrite occur in quartz-carbonate veinlets in hornfelsed sedimentary rocks adjacent to the quartz diorite intrusions and in the biotite feldspar porphyry dykes.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; IP survey, 2.2 line-miles covering Fort 4, 6, 7, 8, 11, 12, 19, 21, 27, 40; geochemical soil survey, 580 samples, 22 line-miles covering all claims; topography mapped from airphotos.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1966, p. 92; *B.C. Dept. of Mines & Pet. Res.,* Preliminary Map No. 12; Assessment Reports 2608, 4591.

MORRISON (93M-7) (Fig. D, No. 116)

LOCATION: Lat. 55° 12′ Long. 126° 20′ (93M/1W)
OMINECA M.D. Approximately 44 miles northeast of Smithers, at south end of Morrison Lake, at approximately 2,800 feet elevation.

CLAIMS: ELLEN 1 to 16, ELLEN 3 Fraction, ALVA 1 and 2, DYKE 1 to 4, DYKE 5 to 7 Fractions, DULL AXE 1 and 2, SHE 13 and 14, FRANCES 25, 27, PATCH Fraction.

OWNER: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver; field address, Box 2169, Smithers.

METAL: Copper.

DESCRIPTION: Chalcopyrite with bornite is disseminated in biotite feldspar porphyry and adjacent siltstones.

WORK DONE: Surface diamond drilling, 13 holes totalling 5,825 feet.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 170, 171.

SHO (Fig. D, No. 61)

LOCATION: Lat. 55° 02′ Long. 126° 31′ (93M/2E)
OMINECA M.D. Babine Lake area, 1 mile south of Smithers Landing.

CLAIMS: SHO 1 to 36.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

DESCRIPTION: Hazelton Group volcanic rocks have been intruded by a hornblende diorite pluton.

WORK DONE: VLF EM and magnetometer survey, 4 line-miles covering Sho 4, 6, 8, 13-21, 27-36.

BIG JOE (93M-135) (Fig. D, No. 2)

LOCATION: Lat. 55° 02′ Long. 126° 33′ (93M/2E)
OMINECA M.D. Two miles southwest of Smithers Landing.

CLAIMS: BIG JOE 1 to 8, J&C 1 to 4, ANN 1 to 36.

OPERATORS: SELCO MINING CORPORATION LIMITED, 55 Yonge Street, Toronto, Ont. and TWIN PEAK RESOURCES LTD., 5424 Halifax Street, Burnaby.

METAL: Copper.

DESCRIPTION: Pyritized porphyritic volcanic rocks contain disseminated chalcopyrite in northwest-trending shear zones. Some bornite and chalcopyrite were noted in carbonate-filled fractures in the volcanic rocks.

WORK DONE: 1972 – soil samples collected at 200 by 800-foot grid spacing.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 171; Assessment Report 4095.

HOL (93M-145) (Fig. D, No. 59)

LOCATION: Lat. 55° 03′ Long. 126° 45′ (93M/2)
OMINECA M.D. Two miles southwest of Holland Lake, 25 miles east of Moricetown, at approximately 2,800 feet elevation.
CLAIMS: HOL 1 to 38.
OWNER: W. R. Bacon.
OPERATOR: LUC SYNDICATE, 1720, 1055 West Hastings Street, Vancouver.
METALS: Copper, molybdenum.
DESCRIPTION: A northerly oriented elliptical stock of quartz monzonite grades to biotite feldspar porphyry near the south margin. Sedimentary rocks marginal to the intrusion have been metamorphosed to biotite hornfels. Minor chalcopyrite and molybdenite occur in the biotite feldspar porphyry and pyrite occurs in the hornfelsed sedimentary rocks.
WORK DONE: Surface geological mapping, 1 inch equals 660 feet covering all claims; geochemical soil survey, 307 samples taken on 200 by 800-foot grid spacing covering Hol 1-24; magnetometer survey, 8 line-miles covering Hol 1-24; frequency-domain IP survey, 6 line-miles covering Hol 1-24, 37, 38.
REFERENCE: Assessment Report 4488.

TRAVIS (Fig. D, No. 60)

LOCATION: Lat. 55° 07′ Long. 126° 48′ (93M/2W)
OMINECA M.D. Twelve miles northwest of Smithers Landing and 27 miles northeast of Smithers, on Harold Price Creek.
CLAIMS: TRAVIS 1 to 12, TRAVIS 1 to 4 Fractions.
OWNER: EVERGREEN EXPLORATIONS LTD., Box 604, Smithers.
WORK DONE: 1972 – linecutting, 3.55 miles of grid established.
REFERENCE: Assessment Report 4511.

BLUNT (93M-25) (Fig. D, No. 62)

LOCATION: Lat. 55° 11′ Long. 127° 13′ (93M/3E)
OMINECA M.D. Twenty miles east of Hazelton, 2 miles south of Blunt Mountain.
CLAIMS: GYPSY 1 to 32, GYPSY 1 to 9 Fractions.
OWNERS: Peter F. Bland and Lorne E. Ross.
OPERATOR: GREAT OAKS MINING CORPORATION, 1101, 510 West Hastings Street, Vancouver.
METALS: Copper, molybdenum.
DESCRIPTION: Traces of chalcopyrite and molybdenite were noted with quartz stringers and stockworks in a Tertiary intrusion.
WORK DONE: Magnetometer survey, 6 line-miles.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 188; Assessment Report 4429.

SULTANA (SILVER TIP) (93M-61) (Fig. D, No. 64)

LOCATION: Lat. 55° 06' Long. 127° 32' (93M/4E)
OMINECA M.D. Eight miles south of Hazelton, 2 miles southeast of Tiltusha Peak, at approximately 4,500 feet elevation.

CLAIMS: SILVER TIP 1 to 34, S 13 to 20.

OWNER: SULTANA SILVER MINES LIMITED, Box 792, Prince George.

METALS: Copper, molybdenum, silver.

DESCRIPTION: Pyrite, chalcopyrite, and molybdenite occur as disseminations and fracture fillings in granodiorite of the Rocher Deboule stock. Silver mineralization is also present.

WORK DONE: Surface diamond drilling, two holes totalling 160 feet on Silver Tip 6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 173; 1971, p. 188.

BRUNSWICK (93M-66) (Fig. D, No. 63)

LOCATION: Lat. 55° 07' Long. 127° 36' (93M/4E)
OMINECA M.D. In the Rocher Deboule Range south of Hazelton, on Red Rose Creek, at approximately 4,600 feet elevation.

CLAIMS: BILL 1 to 14.

OWNER: Estate of James T. Williamson.

OPERATOR: ARCADIA EXPLORATIONS LTD., Box 35368, Station E, 2021 West 42nd Avenue, Vancouver V6M 4G5.

METALS: Silver, lead, zinc, copper, gold.

DESCRIPTION: The property is underlain by hornfelsed argillites and greywackes. A plug of granodiorite has intruded the metasedimentary rocks in the northeast part of the property. A number of feldspar porphyry dykes cuts both the granodiorite and the metasedimentary rocks. The Brunswick vein is a vuggy quartz system containing pyrite, galena, sphalerite, and chalcopyrite.

WORK DONE: Transit and chain control survey on surface and in two adits; SP survey, 920 line-feet; EM survey, 180 line-feet; geological mapping, 1 inch equals 50 feet; and sampling of vein covering Bill 1 and 2; road construction, 1.5 miles on Bill 2, 7, 9, 11, and 14; trenching, 160 feet on Bill 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 429; Bull. 43, pp. 50, 51; Assessment Report 4839.

WAG, WET (Fig. D, No. 65)

LOCATION: Lat. 55° 24' Long. 127° 45' (93M/5W)
OMINECA M.D. Approximately 3 miles northwest of Kispiox.

CLAIMS: WAG 35 to 42, WET 1 to 6.

OWNER: J. H. SARGENT, Box 39, New Hazelton.

WORK DONE: Two miles of linecutting during 1972.

REFERENCE: Assessment Report 4433.

SILVER STANDARD MINE (93M-49) (Fig. D, No. 117)

By J. F. Hutter

LOCATION: Lat. 55° 19' Long. 127° 37.5' (93M/5E)
OMINECA M.D. Five and one-half miles north of Hazelton, on Mount Glen, at approximately 1,500 feet elevation.

CLAIMS: ALMO, LEADVILLE, STANDARD, SILVER STANDARD, SKAGWAY, GLEN MOUNTAIN (Lots 2259 to 2264), CANADIAN KING (Lot 2409), and BLACK PRINCE (Lot 2411) Crown-granted claims.

OWNER: Silver Standard Mines Limited.

OPERATOR: GEORGE BRAUN, Hazelton.

METALS: Gold, silver, lead, zinc, cadmium (production shown on Table I).

DESCRIPTION: Banded and massive galena, sphalerite, and tetrahedrite with pyrite, arsenopyrite, and quartz gangue occur in a vein system of 16 parallel veins in (mainly) tuffaceous sandstone of the Lower Cretaceous Hazelton Group.

WORK DONE:

The property was operated by George Braun on a lease arrangement with the owner. Mining during the year was confined to No. 11 cross-vein on the 1500 level.

The ore was hand sorted in the stope, hand trammed to storage near the 1300 portal, and shipped by rail to Trail.

Considerable rehabilitation has been accomplished during the year and a substantial increase in production is forecast for 1974.

Two men were employed during the later part of the year.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 98, 99.

SUNRISE (93M-43) (Fig. D, No. 154)

LOCATION: Lat. 55° 21' Long. 127° 29' (93M/6W)
OMINECA M.D. Ten miles northeast of Hazelton, on the north side of Nine Mile Mountain, at approximately 5,000 feet elevation.

CLAIMS: SUNRISE, SUNSET, ETHEL, NOONDAY, ETHEL Fraction, and HIDDEN TREASURE Crown-granted claims and VAN 1 to 6 and ALPHA 7 to 30 located claims.

OWNER: SUNRISE SILVER MINES LTD., 818 Cumberland Crescent, North Vancouver.

METALS: Silver, lead, zinc, antimony.

DESCRIPTION: Nine Mile Mountain is underlain by a sequence of sedimentary rocks of Upper Jurassic and Lower Cretaceous age which are intruded by a granodiorite stock measuring 4 miles long and one-half mile wide. Mineralization encountered in both properties examined consists of silver-bearing galena, jamesonite, sphalerite, and pyrite, occurring as stringers and as blebs in quartz veins and to a lesser extent in the altered granodiorite wallrock. The quartz veins occur in east-west parallel fault fissures and in northeast cross-fissures forming a zone about 700 feet wide and about 2,000 feet along the strike from Sunrise Silver to Lead King.

WORK DONE: Road construction, 300 feet; stripping, 90 by 80 by 24 feet.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 430.

HOT (93M-124) (Fig. D, No. 66)

By N. C. Carter

LOCATION: Lat. 55° 24' Long. 127° 02' (93M/6E)
OMINECA M.D. Approximately 50 miles north of Smithers, on the north slope of Mount Thoen, at about 600 feet elevation.

CLAIMS: HOT 1 to 26.

OWNER: COBRE EXPLORATION LIMITED, 534, 789 West Pender Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION:

Chalcopyrite and molybdenite mineralization is associated with a swarm of porphyry dykes which occur along the margins of a large granodiorite stock and intrude Upper Jurassic siltstones and greywackes.

The porphyry dyke swarm and principal showings are on a steep north-trending ridge northeast of the summit of Mount Thoen. The dykes are quartz-biotite feldspar porphyries of granodiorite composition in which 1 to 3-millimetre phenocrysts of anhedral quartz, euhedral plagioclase (An_{25-30}), and biotite plates and books are contained in a very fine-grained matrix of quartz and feldspar. Original hornblende is altered to a mixture of quartz and biotite.

Sedimentary rocks have been thermally metamorphosed to biotite hornfels. The large stock which underlies much of Mount Thoen is composed of equigranular, massive granodiorite consisting mainly of plagioclase (An_{30}), K-feldspar, quartz, hornblende, biotite, and magnetite.

Chalcopyrite and molybdenite occur in fractures, quartz veinlets, and as fine disseminations in the porphyry dykes and adjacent hornfelsed sedimentary rocks.

WORK DONE: Linecutting, 1.8 miles of grid; magnetometer survey, 1.5 line-miles covering Hot 4, 6, 8, 10; surface diamond drilling, three holes totalling 194 feet on Hot 6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 431; Assessment Report 4699.

FRENCH (93M-12) (Fig. D, No. 68)

LOCATION: Lat. 55° 25' Long. 126° 52' (93M/7W)
OMINECA M.D. Four miles north-northwest from French Peak, Babine Lake area.

CLAIMS: RO 1 to 66.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Cretaceous sedimentary rocks have been intruded by an altered feldspar porphyry plug approximately 1 mile in diameter. Extensive pyrite with minor chalcopyrite has been recognized.

WORK DONE: Trenching, six pits on RO 37-41.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1966, p. 92;

RED (FOSS) (93M-13) (Fig. D, No. 67)

LOCATION: Lat. 55° 25' Long. 126° 54' (93M/7W)
OMINECA M.D. Babine Lake area, 4 miles northwest of French Peak.

CLAIMS: SUE 1 to 8.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Silver, copper, lead, zinc.

DESCRIPTION: Sedimentary rocks of Middle Cretaceous age have been cut by a fault zone carrying galena, pyrite, sphalerite, and chalcopyrite.

WORK DONE: Geochemical soil survey, 420 samples, 8 line-miles covering Sue 1-8.

REFERENCE: Assessment Report 3871.

CAVZ (TRAIL PEAK) (93M-11) (Fig. D, No. 71)

LOCATION: Lat. 55° 25' Long. 126° 15' (93M/8W)
OMINECA M.D. Ten miles west of Takla Lake, on and southeast of Trail Peak, at approximately 4,500 feet elevation.

CLAIMS: CAVZ 1 to 43, 45, 47, 49, 51, 53, 55, CAVZ 1 to 4 Fractions.

OWNER: Ecstall Mining Limited.

OPERATOR: HUDSON'S BAY OIL AND GAS COMPANY LIMITED, 171 Pemberton Avenue, North Vancouver V7P 2R4.

METAL: Copper.

DESCRIPTION: A Tertiary biotite feldspar porphyry dyke swarm has intruded an older diorite pluton and adjacent siltstones. Pyrite is widely distributed about the intrusions and chalcopyrite occurs in fractures in the biotite feldspar porphyry.

WORK DONE: Geochemical rock chip survey, 65 samples.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 110-112.

LYNN (93M-142) (Fig. D, No. 69)

LOCATION: Lat. 55° 18' Long. 126° 13' (93M/8E)
OMINECA M.D. Fifty-four miles northeast of Smithers, 4 miles north of the south end of Nakinilerak Lake, at approximately 4,000 feet elevation.

CLAIMS: LYNN 1 to 48, LYNN 1 to 18 Fractions.

OWNERS: Ducanex Resources Limited and Twin Peak Resources Ltd. (amalgamation of Twin Peak Mines Ltd. and Whitesail Mines Ltd.)

OPERATOR: DUCANEX RESOURCES LIMITED, 5424 Halifax Street, Burnaby V5B 2N7.

METAL: Copper.

DESCRIPTION: A hydrothermally altered biotite feldspar porphyry stock has intruded volcanic rocks. The stock is entirely overburden covered. Chalcopyrite occurs within the pluton at the contact near an intrusive breccia zone. A pyrite halo has been developed in the volcanic rocks around the stock.

WORK DONE: Surface diamond drilling, five holes totalling approximately 1,000 feet on Lynn 3.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 432.

RAINBOW (93M-118) (Fig. D, No. 72)

LOCATION: Lat. 55° 37′ Long. 126° 28′ (93M/9W)
OMINECA M.D. Twelve miles west of Takla Lake, 2.5 miles southwest of Centre Peak, at approximately 5,900 feet elevation.

CLAIMS: DRONE 2, 4 to 8.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION: Disseminated chalcocite, bornite, and chalcopyrite occur in andesitic tuffs and flows of the Hazelton Group.

WORK DONE: Trenching, 45 cubic yards on Drone 8.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 193.

BRIAN, ADD (93M-93) (Fig. D, No. 73)

LOCATION: Lat. 55° 39′ Long. 126° 50′ (93M/10W)
OMINECA M.D. Twenty-five miles west of Takla Lake, near the peak of Mount Horetzky, at approximately 5,000 feet elevation.

CLAIMS: BRIAN 1 to 10, 19 to 24, ADD 1 to 18, 23 to 28, VAL 3 to 8, 11 to 16, CAT 1 to 24, DON 1 to 13.

OWNERS: PACIFIC PETROLEUMS LIMITED, 408, 580 Granville Street, Vancouver and HECLA OPERATING COMPANY, 2009, 1177 West Hastings Street, Vancouver V6E 2K3.

METALS: Copper, molybdenum.

DESCRIPTION: A diorite plug is intrusive into Hazelton Group sedimentary rocks. Biotite feldspar porphyry dykes crosscut both rock types. Minor chalcopyrite and molybdenite occur in and adjacent to the intrusive plug.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; linecutting; frequency-domain IP survey, 8.7 line-miles; magnetometer survey, 9 line-miles covering Add 1, 2, 11, 12, 15-18, 23, 24, Brian 1-4, 7, 9, 19, 20, 23, 24, and Cat 13-16, 22; surface diamond drilling, eight holes totalling 4,165 feet on Brian 1, 5, 15, 21, 22 and Add 2, 11.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 433; Assessment Report 4621.

7A (93M-122) (Fig. D, No. 74)

LOCATION: Lat. 55° 34' Long. 127° 20' (93M/11W)
OMINECA M.D. Three to 4 miles upstream from the confluence with Babine River, on Thomlinson Creek, at approximately 4,800 feet elevation.

CLAIMS: 7A 1 to 50, 55 to 90, 7D 1 to 12.

OWNER: THE GRANBY MINING COMPANY LIMITED, 2000, 1055 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: A small quartz monzonite porphyry stock of Late Cretaceous age contains chalcopyrite and molybdenite in fractures. Copper and molybdenum mineralization also occurs in hornfelsed sedimentary rocks marginal to the stock.

WORK DONE: Geochemical soil survey, 638 samples taken at 200 by 400-foot and 800-foot grid spacing covering 7A 31-50, 59, 60, 62, 64, 66-73, 75, 77, 79, 83, 85, 87, 89, 90 and 7D 1 to 12; magnetometer survey, 4 line-miles; linecutting; time-domain IP survey, 10 line-miles covering 7A 32, 34, 36, 38, 40, 43-50, 73, 75, 77, 79, 89, 90 and 7D 7 and 8.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 433; Assessment Reports 4698, 4715.

DRIFTWOOD (93M-117) (Fig. D, No. 75)

LOCATION: Lat. 55° 50' Long. 126° 36' (93M/15E)
OMINECA M.D. Fifteen miles north of Bulkley House, on Skutsil Knob, at approximately 5,800 feet elevation.

CLAIMS: BORNITE, ESMERELDA, and BORNITE Fraction Crown-granted claims; SP 1 to 12, BELMONT, BETH, TRIX, BESD, CAMP, ALDA, STUART, TAKLA, TREMBLEUR, JACKSON, JACK, BEATRICE, BESSIE.

OWNERS: Cominco Ltd. and Craigmont Mines Limited.

OPERATOR: CRAIGMONT MINES LIMITED, 270, 180 Seymour Street, Kamloops.

METALS: Copper, silver.

DESCRIPTION: Bornite, chalcopyrite, and tetrahedrite occur in andesitic and basaltic flows of the Takla Group.

WORK DONE: Topography mapped; surface diamond drilling, four holes totalling 1,927 feet on Bornite and Bessie.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1930, p. 148; Assessment Report 4967.

FIRE (KAZA) (93M-111) (Fig. D, No. 77)

LOCATION: Lat. 56° 00' Long. 126° 20' (93M/16W; 94D/1W)
OMINECA M.D. Approximately 100 miles northeast of Smithers, 4 miles south-southwest of Kaza Lake, at 3,700 feet elevation.

CLAIMS: BRONCO 1 to 34, BURN 1 to 4, CAT 1 to 4, FIRE 1 to 4, 11, 12, HOT 1 to 12, ICE 1 to 16, LOGAN 1 to 11, MAG 5 to 12, 14, ROBERTA 1 to 6.

OWNER: Kaza Copper Ltd.

OPERATOR: DYNASTY EXPLORATIONS LIMITED, 330, 355 Burrard Street, Vancouver.

METALS: Copper, gold, silver.

DESCRIPTION: The Kaza copper property is underlain by Mesozoic and Tertiary sedimentary and volcanic rocks. Andesite porphyries, tuffs, and breccias of the Takla Group are the host rocks of the mineralization. Epidote alteration is widespread in these rocks. The mineral showings consist of fissure veins and narrow skarn zones related to northwest faulting. Mineralization consists mainly of pyrite with minor chalcopyrite, bornite, sphalerite, and magnetite. The best assay obtained was 1.39 per cent copper, .071 ounce per ton gold, and .41 ounce per ton silver across 6 feet.

WORK DONE: Surface geological mapping, 1 inch equals 1,320 feet and 1 inch equals 400 feet; magnetometer survey, 4 line-miles covering Fire 2, 3, and 4; geochemical soil survey, 650 samples taken on reconnaissance and grid lines, with grid spacing 200 by 400-foot, 23 line-miles covering most of the claims; linecutting.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, p. 88; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1969, p. 108; 1970, p. 177; Assessment Reports 1191, 4477.

LION (93M-146) (Fig. D, No. 76)

LOCATION: Lat. 55° 54' Long. 126° 05' (93M/16E)
OMINECA M.D. Three miles northeast of Iktlaki Peak, near Ominicetla Creek, between 4,000 and 5,000 feet elevation.

CLAIMS: LION 1 to 84.

OWNER: W. R. Bacon.

OPERATOR: LUC SYNDICATE, 1720, 1055 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain by Lower Triassic volcanic flows and pyroclastic rocks. Gossan areas have been developed over an area of volcanic rocks containing pyrite and chalcopyrite in fractures.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; frequency-domain IP survey, approximately 4 line-miles covering Lion 9, 15, 36-38, 56, 57, 59, 61, 62, 69-73, 83, 84; geochemical soil survey, 1,355 samples taken at 200 by 400-foot and 800-foot grid spacing, approximately 50 line-miles covering Lion 1-74, 83, 84.

REFERENCE: Assessment Report 4725.

MOSQUITO (93N-163) (Fig. D, No. 3)

LOCATION: Lat. 55° 07′ Long. 124° 03′ (93N/1E)
OMINECA M.D. Four and one-half miles south of Mount Milligan, east of Nation Lakes, at approximately 3,500 feet elevation.

CLAIMS: MOSQUITO 1 to 10, ZAP 1 to 16.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver V6C 1A5.

METAL: Copper.

DESCRIPTION: The country rocks are generally porphyritic hornblende andesite and in places a medium-grained andesite tuff which is intruded (?) by feldspar porphyry. Some chalcopyrite was noted in fractures in feldspar porphyry.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering Mosquito 1-10; linecutting and frequency-domain IP survey, 7.8 line-miles covering Mosquito 2, 4, 6, 8-10 and Zap 1-4; geochemical soil survey, 115 samples covering Mosquito 1-10.

REFERENCES: Assessment Reports 4274, 4742.

PU (Fig. D, No. 78)

LOCATION: Lat. 55° 09′ Long. 124° 29′ (93N/2E)
OMINECA M.D. Two miles west of the east end of Witch Lake, extending northwest from the shore.

CLAIMS: PU 9 to 20.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver V6C 1A5.

DESCRIPTION: Takla andesitic flows and tuffs are intruded by two small bodies of syenite and diorite.

WORK DONE: Linecutting; frequency-domain IP survey, 5.2 line-miles covering PU 9-11, 13-15.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 435; Assessment Reports 3853, 4589.

LSD (93N-162) (Fig. D, No. 79)

LOCATION: Lat. 55° 14′ Long. 124° 35′ (93N/2E)
OMINECA M.D. Five miles north of Chuchi Lake, on Klawdetelle Creek.

CLAIMS: LSD 1 to 38, 40, 42, 44, 46, 48 to 80, LSD A Fraction.

OWNER: Hudson Bay Exploration and Development Company Limited.

OPERATORS: HUDSON BAY MINING AND SMELTING CO. LIMITED, Flin Flon, Manitoba and ANGLO AMERICAN CORPORATION OF CANADA EXPLORATION LIMITED, Box 28, Toronto Dominion Centre, Toronto, Ontario.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite, pyrite, and minor molybdenite occur in fractures and narrow shear zones in a syenite-diorite stock that intrudes Takla volcanic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet and geochemical soil survey, 60 samples, 2.2 line-miles covering LSD 73-80; surface diamond drilling, four holes totalling 1,205 feet on LSD 60, 65, and 68; three shallow trenches on LSD 2.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 436.

CIR (SRM) (93N-104) (Fig. D, No. 80)

LOCATION: Lat. 55° 14' Long. 124° 42' (93N/2E)
OMINECA M.D. Chuchi Lake, 3.5 miles north of the mouth of Klawdetelle Creek, between 3,500 and 4,000 feet elevation.

CLAIMS: CIR 1 to 24.

OWNERS: S.E.R.E.M. Ltd. in trust with Bergminex Associates.

OPERATOR: S.E.R.E.M. LTD. on behalf of BERGMINEX ASSOCIATES, 770, 2100 Drummond Street, Montreal, P.Q. H3G 1X1.

METAL: Copper.

DESCRIPTION: The claims are underlain by a volcanic-sedimentary sequence of andesites, andesitic tuffs, and some argillites and cherts (Takla Group), intruded by syenitic and related dioritic stock and dykes (Hogem batholith satellites).

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical survey, 345 soil samples and 17 silt samples taken at 200 by 400-foot grid spacing, 19.88 line-miles; and linecutting covering all claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 196 (SRM).

DP (93N-164) (Fig. D, No. 4)

LOCATION: Lat. 55° 08.5' Long. 124° 32.5' (93N/2E, 1W)
OMINECA M.D. Nation Lakes area, on the south shore of Chuchi Lake, 5 miles east of Jean Marie Creek.

CLAIMS: DP 1 to 15, MT 23, 25, 27 to 31, D 172, 174, 176, 178, 180, 182, 184.

OWNER: ATTILA RESOURCES LIMITED, 107, 325 Howe Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain by Takla Group andesites and sedimentary rocks intruded by monzonite. One limestone outcrop was noted to carry pyrite and traces of chalcopyrite (DP 14). One outcrop of K-feldspar pegmatite with associated magnetite and sericite was noted.

WORK DONE: Geochemical survey, 996 samples (analysed for copper); magnetometer survey, during 1972.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 435; Assessment Report 4244.

JEAN (93N-83) (Fig. D, No. 81)

LOCATION: Lat. 55° 07′ Long. 124° 50′ (93N/2W)
OMINECA M.D. Eight miles southwest of Chuchi Lake, near the headwaters of Jean Marie Creek, at approximately 4,000 feet elevation.

CLAIMS: JEAN, JW, FEB, totalling approximately 318.

OWNER: NBC Syndicate.

OPERATORS: COMINCO LTD., DUVAL CORPORATION OF CANADA, THE GRANBY MINING COMPANY LIMITED, and STANDARD OIL COMPANY OF BRITISH COLUMBIA LIMITED, c/o Cominco Ltd., 200 Granville Square, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Disseminated and fracture-controlled copper and molybdenum sulphides occur in acid and intermediate outer phases of the Hogem batholith. The country rocks which comprise Takla Group volcanic rocks are also mineralized.

WORK DONE: Surface geological mapping, 1 inch equals 800 feet; magnetometer survey, 31 line-miles; frequency-domain IP survey, 15.4 line-miles; and linecutting covering JW and Jean claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 436, 437; Assessment Report 4774.

IAN (Fig. D, No. 84)

LOCATION: Lat. 55° 20′ Long. 124° 47′ (93N/7W)
OMINECA M.D. Seventy miles northeast of Fort St. James, 2 miles east of Ahdatay Lake.

CLAIMS: IAN 1 to 33.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver V6C 1A5.

DESCRIPTION: The claims lie along the contact of Takla Group volcanic rocks with basic rocks of the Hogem batholith.

WORK DONE: 1972 – ground magnetometer and geochemical survey; 1973 – frequency-domain IP survey, 6.5 line-miles covering Ian 3-13, 18, 19; geochemical soil survey, 350 samples, 16 line-miles covering Ian 1-33.

REFERENCES: Assessment Reports 4430, 4653.

BOOM, FRANKIE (KWANIKA CREEK) (93N-73) (Fig. D, No. 82)

LOCATION: Lat. 55° 30′ Long. 125° 15′ (93N/6W, 11W)
OMINECA M.D. On Kwanika Creek, 4 to 8 miles north of its mouth at the east end of Tsayta Lake, at approximately 3,500 feet elevation.

CLAIMS: BOOM, FRANKIE, T GEE, BH, BX, TX, AZTEC, INCA, MAYA, MG, POST, OVP, KQ, CU, JAM, KS, CHO, totalling approximately 100.

OWNER: Bow River Resources Ltd.

OPERATOR: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver V6C 1A5.

(93N/6E)

METALS: Copper, molybdenum.

DESCRIPTION: Copper and molybdenum mineralization associated with granitic rocks have intruded monzonite units of the Hogem batholith along an altered highly fractured zone related to the Pinchi fault.

WORK DONE: Linecutting; surface geological mapping, 1 inch equals 400 feet; frequency-domain IP survey, 40 line-miles; and ground magnetometer survey, 40 line-miles covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 440-447; Assessment Reports 4577, 4773, 4826.

HEATH (93N-71, 72) (Fig. D, No. 121)

LOCATION: Lat. 55° 16' Long. 125° 10' (93N/6E)
OMINECA M.D. West-southwest of Mount Nation, equidistant between Mount Nation and the northwest end of Tchentlo Lake.

CLAIMS: HEATH 1 to 14, HEATH 15 and 16 Fractions, CAT 1 to 14, 16, 18, 20, 23 to 26, 31, 33 to 41, CAT 29, 30, and 32 Fractions.

OWNER: Colin J. Campbell.

OPERATOR: NATION LAKE MINES LIMITED, 201, 1595 Fifth Avenue, Prince George.

METAL: Copper.

DESCRIPTION: Chalcopyrite occurs as disseminations in and along epidote-calcite-hematite fractures in magnetic dark grey diorite. Fine-grained orange to purple dykes cut the diorite in this locality.

WORK DONE: Frequency-domain IP survey, 12.3 line-miles covering all the Heath claims and 11 Cat claims; linecutting, 2 miles on Cat 23-25.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 199; Assessment Report 4672.

TYGER (93N-173) (Fig. D, No. 95)

LOCATION: Lat. 55° 18' Long. 125° 08' (93N/6E)
OMINECA M.D. Northwest of Fort St. James, northeast of the west end of Tchentlo Lake.

CLAIMS: TYGER 1 to 70, 121 to 150.

OWNER: AMOCO CANADA PETROLEUM COMPANY LTD., Mining Division, 2160, 1055 West Hastings Street, Vancouver V6E 2E9.

METAL: Copper.

DESCRIPTION: Chalcopyrite occurs as coatings on widely spaced fractures in country rocks which include hornblendite and diorite phases of the Hogem batholith. These have been intruded by granodiorite-quartz monzonite bodies.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet, 1 inch equals 4,000 feet, and 1 inch equals 100 feet covering the western and south central claims; ground magnetometer survey covering the western claims; geochemical soil survey, approximately 600 samples, about 15 line-miles covering the western and south central claims; linecutting; topography mapped.

SOONER (93N-169) (Fig. D, No. 122)

LOCATION: Lat. 55° 19′ Long. 124° 51′ (93N/7W)
OMINECA M.D. Seven miles north of Tchentlo Lake.

CLAIMS: SOONER 1 to 10, 13 to 21, 25 to 29; SOONER 2 to 5, 7 to 10, 14 to 16 Fractions.

OWNER: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver.

METAL: Molybdenum.

DESCRIPTION: Molybdenite occurs in fractures in augite porphyry of the Takla Group, near contacts with alaskite dykes.

WORK DONE: Surface diamond drilling, four holes totalling 873 feet on Sooner 16 and 27 and Sooner 14 Fraction.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 449.

STROH, REYNOLDS (93N-137) (Fig. D, No. 96)

LOCATION: Lat. 55° 37′ Long. 124° 24′ (93N/9W)
OMINECA M.D. On Boulder Creek, about 6 miles southeast of Manson Creek village, between 3,200 and 4,100 feet elevation.

CLAIMS: STROH 1 to 9, REYNOLDS 1 to 4, LESLIE 1 to 8, SPANNER 1 to 8, WRIGHT 1 to 8, DOYLE 1 to 7, PATTENDEN 1 to 6, JO 1 to 10, SKEL, SKEL 1 to 3, DON, DON 1 to 3.

OWNER: NORTHERN TUNGSTEN MINES LTD., 5, 1257 Fourth Avenue, Prince George.

METALS: Copper, molybdenum, tungsten.

DESCRIPTION: Country rocks in the area include altered chlorite schist, slate, quartzite, gneiss, and feldspar porphyry. Mineralization includes chalcopyrite, galena, sphalerite, molybdenite, and scheelite which occur in quartz veins, silicified breccia zones, and altered limestone. The slate appears to be barren.

WORK DONE: Surface geological mapping, 1 inch equals one-half mile covering Leslie 1-8, Jo 1-10, Stroh 1-9, Reynolds 1-4; IP survey, approximately 2 line-miles covering Don 1, 3 and Skel 3, 4; EM survey covering Leslie 1-8, Stroh 1-9, Jo 1-10, Doyle 2, Pattenden 1-3, 5; geochemical soil survey, 62 samples covering Skel, Skel 1-3, Don, Don 1-3; surface diamond drilling, eight holes totalling 2,614 feet on Don 1 and Stroh 7 and 8; road construction, 2 miles on Pattenden 1, 3, 5, Don 1, 2, and Skel 2; trenching, 400 feet on Stroh 7.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 450; Assessment Reports 3864, 4611.

SKEL (Fig. D, No. 92)

LOCATION: Lat. 55° 38' Long. 124° 24' (93N/9W)
OMINECA M.D. Skeleton Creek which drains into Manson River.
CLAIMS: SKEL 4 to 16, DON 4 to 16, ERNIE 1 to 6, LOST 1 to 6.
OWNER: BOULDER MINES LTD., 5, 1257 Fourth Avenue, Prince George.
WORK DONE: Geophysical survey covering all claims; geochemical soil survey, 70 samples, approximately 5 line-miles covering Skel 4-16 and Ernie 1-6; trenching, 1,000 feet on Skel 5 and 6.

FAIRVIEW (93N-23) (Fig. D, No. 5)

LOCATION: Lat. 55° 37'-42' Long. 124° 25'-37' (93N/9W, 10E)
OMINECA M.D. Between Manson River and south Germansen River, adjacent to the south of the community of Manson Creek.
CLAIMS: IDA 2 to 40, 43 to 80, 83 to 120, 122 to 152, TIDA 1 to 14.
OWNERS: C. J. SULLIVAN and T. RODGERS, 1022, 510 West Hastings Street, Vancouver.
METALS: Copper, gold.
DESCRIPTION: The claims which cover an area from which the Manson and Germansen River placer golds were derived, are underlain by interbedded thin-bedded carbonaceous argillites and slates with a variety of volcanic rocks.
WORK DONE: 1972 – geological, geochemical, and IP surveys; 1973 – surface diamond drilling, five holes totalling 1,639 feet on Ida 119, 141, 145, 146 and TIDA 7.
REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1938, p. C12; *Geol. Surv., Canada,* Mem. 252, p. 180; Assessment Reports 4245, 4246.

VERGIL (93N-174) (Fig. D, No. 120)

LOCATION: Lat. 55° 44' Long. 124° 27' (93N/9W)
OMINECA M.D. Four and one-half miles north-northeast of the community of Manson Creek, at approximately 4,000 feet elevation.
CLAIMS: VERGIL 1 to 6, FEX 1 to 9, 11-16, FIC 1 to 6, 8, MARK 1 to 6, PAN 1 to 8, 10 to 13, SAFE 1 to 5.
OWNER: Panther Mines Ltd.
OPERATOR: TEXACO CANADA LIMITED, Producing Department, 600 Sixth Avenue SW., Calgary, Alta.
METAL: Niobium.
DESCRIPTION: The Vergil property is underlain by a series of high-grade metamorphosed schists and gneisses forming part of the Wolverine Complex (pre-Permian age). The property lies along a fault zone separating the Wolverine Complex from Permian sedimentary rocks of the Cache Creek Group. Mineralization consists of possible niobium associated with carbonatite.
WORK DONE: Trenching, 1,850 feet on Vergil 3 and 4.

BURN (93N-107) (Fig. D, No. 86)

LOCATION: Lat. 55° 31′ Long. 125° 14′ (93N/11E)
OMINECA M.D. Six miles south of Kwanika Creek at approximately 4,500 feet elevation.

CLAIMS: BURN 1 to 80.

OWNER: W. R. Bacon.

OPERATOR: LUC SYNDICATE, 1720, 1055 West Hastings Street, Vancouver.

METALS: Molybdenum, copper.

DESCRIPTION: Fracture systems in monzonite are mineralized with pyrite, molybdenite, and chalcopyrite. Molybdenite mineralization is also disseminated in an alaskite dyke.

WORK DONE: Geochemical soil and silt survey.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 452.

HAWK (93N-171) (Fig. D, No. 93)

LOCATION: Lat. 56° 02′ Long. 125° 41′ (93N/13E; 94C/4E)
OMINECA M.D. Forty-five miles northwest of Germansen Landing, at the headwaters of the northern tributaries of Haha Creek, at approximately 5,500 feet elevation.

CLAIMS: HAWK 1 to 135, 137, 138, 140, 141, 143.

OWNER: AMOCO CANADA PETROLEUM COMPANY LTD., Mining Division, 2160, 1055 West Hastings Street, Vancouver V6E 2E9.

METAL: Copper.

DESCRIPTION: Chalcopyrite, bornite, and pyrite occur as disseminated grains within several gneiss lenses enveloped by the Duckling Creek syenite complex.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; ground magnetometer survey, 6.4 line-miles; IP survey, 6 line-miles; geochemical soil survey, approximately 150 samples, 7 line-miles covering Hawk 113-116 and 127-130; surface diamond drilling, four holes totalling 2,461 feet on Hawk 116, 127, and 129; topography mapped; minor trenching.

MISTY, FORE (KAY) (93N-1) (Fig. D, No. 87)

LOCATION: Lat. 55° 57′ Long. 125° 30′ (93N/13E, 14W)
OMINECA M.D. Approximately 33 miles west-northwest of Germansen Landing, 1 mile north of the headwaters of the west branch of Duckling Creek, between 5,000 and 5,800 feet elevation.

CLAIMS: MISTY 1 to 52, MISTY 1 and 2 Fractions, BELL 1 to 46.

OWNER: EL PASO MINING AND MILLING COMPANY, 500, 885 Dunsmuir Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The property is located within the Duckling Creek syenite complex. The mineralized zone occurs along and adjacent to a major northwesterly striking fault zone which is characterized by gneissic to schistose syenitic rocks. The foliated rocks are marked by metasomatic orthoclase and biotite, and to a lesser degree by chlorite and sericite. Chalcopyrite and lesser bornite and pyrite occur as very fine disseminations in a chloritic gneiss zone. Magnetite occurs in appreciable amounts with the copper zone and to a lesser degree throughout all the rocks.

WORK DONE: IP survey, 10 line-miles covering Misty 1-14; surface diamond drilling, nine holes totalling 5,053 feet on Misty 3, 4, 5, 6, and 12; rotary drilling, 1,600 feet on Misty 3, 4, 6, 10, and 12; road construction, 3 miles (between all drill holes and camp); trenching, 300 feet on Misty 3 and 4; geochemical soil survey, 479 samples, 9.5 line-miles covering Bell 3, 4, 5, and 6.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 454.

LORRAINE, LORREX (93N-2) (Fig. D, No. 88)

By J. A. Garnett

LOCATION: Lat. 55° 55' Long. 125° 27' (93N/14W)
OMINECA M.D. Thirty-five miles northeast of Germansen Landing, 2.5 miles north of the headwaters of Duckling Creek, at approximately 5,500 feet elevation (Fig. 27).

CLAIMS: LORRAINE 1 to 12, LORREX 1 and 2, GK 1 to 112, LORRAINE 1 to 3 Fractions.

OWNER: Kennco Explorations, (Western) Limited.

OPERATOR: THE GRANBY MINING COMPANY LIMITED, 2000, 1055 West Hastings Street, Vancouver.

METAL: Copper.

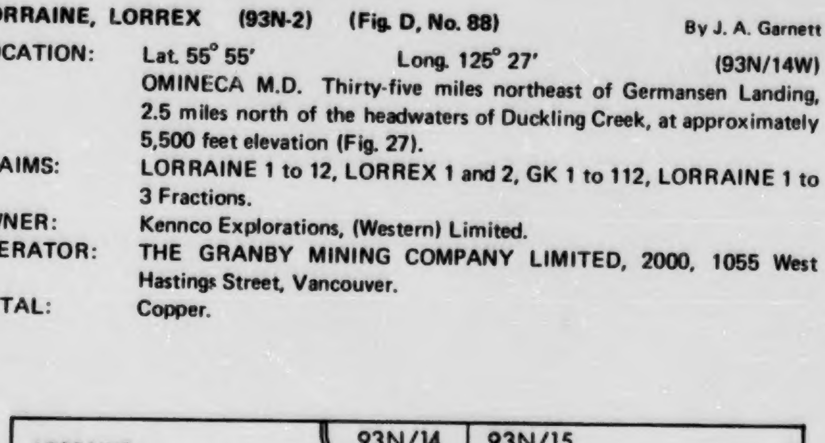
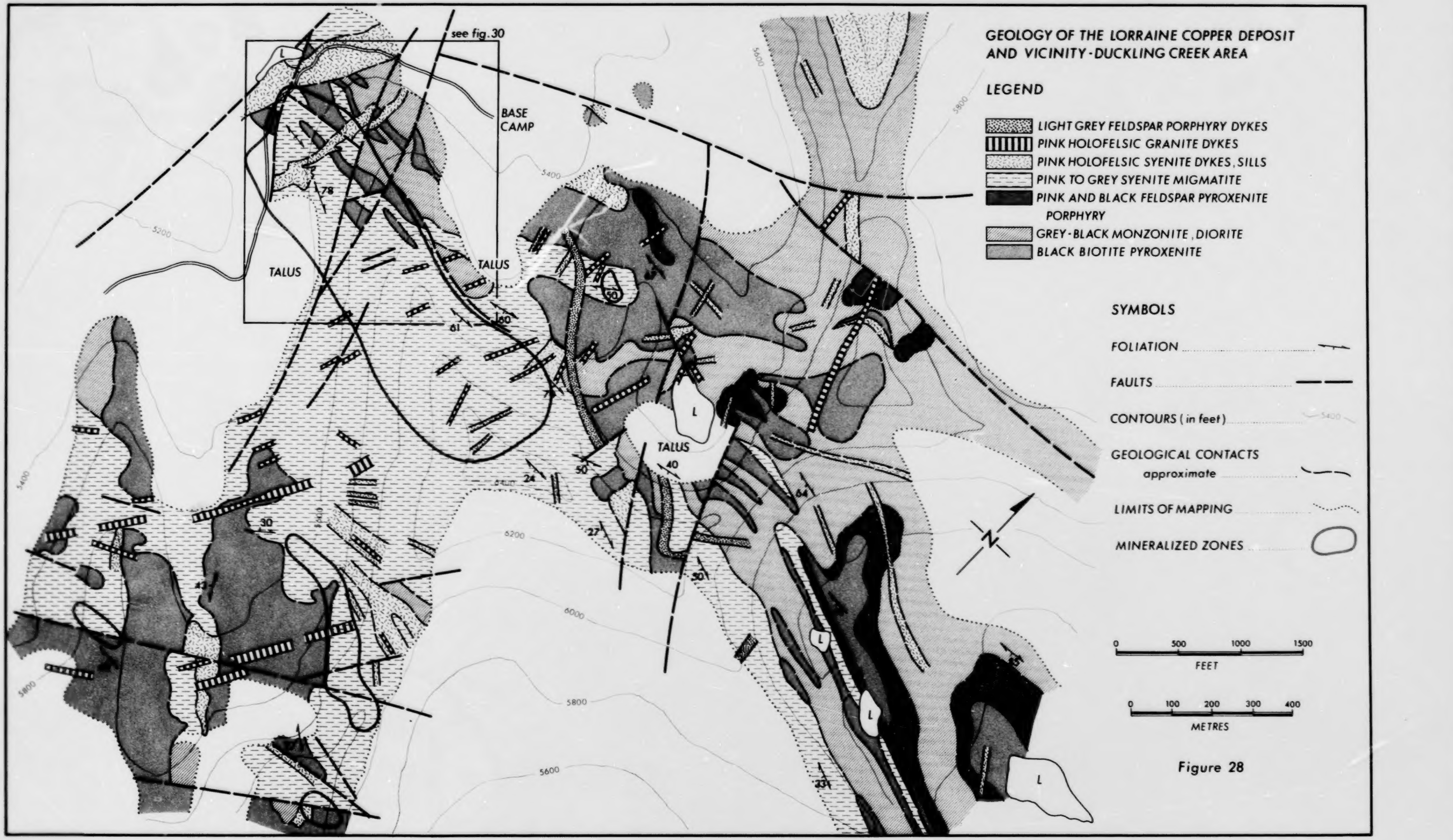

LORRAINE
93N/14
93N/15
N
Duckling
Creek
OMINECA ROAD
Omineca
River
Germansen
Landing
Germansen Lake
KILOMETRES
0
5
10
15
0
5
10
MILES

Figure 27. Lorraine, location map.



GEOLOGY OF THE LORRAINE COPPER DEPOSIT AND VICINITY - DUCKLING CREEK AREA

Figure 28

LEGEND
LIGHT GREY FELDSPAR PORPHYRY DYKES
PINK HOLOFELSIC GRANITE DYKES
PINK HOLOFELSIC SYENITE DYKES, SILLS
PINK TO GREY SYENITE MIGMATITE
PINK AND BLACK FELDSPAR PYROXENITE PORPHYRY
GREY - BLACK MONZONITE, DIORITE
BLACK BIOTITE PYROXENITE
SYMBOLS
FOLIATION
FAULTS
CONTOURS (in feet)
GEOLOGICAL CONTACTS approximate
LIMITS OF MAPPING
MINERALIZED ZONES
0 500 1000 1500
FEET
0 100 200 300 400
METRES
N
see fig. 30
BASE CAMP
TALUS
TALUS
TALUS
L
L
L
L
5200
5400
5600
5800
6000
6200
78
61
60
50
24
50
40
27
30
50
64
33
43

DESCRIPTION:

HISTORY: The malachite-stained cliffs of the Lorraine property are the most visible and best known indication of copper mineralization in the Duckling Creek area. Its presence was known for many years by local Indians, and was shown to prospectors during World War I. Claims were located by The Consolidated Mining and Smelting Company of Canada, Limited in 1943. In 1947, Kennco Explorations, (Western) Limited again located claims on the showings and have worked intermittently on the property since that time. In 1970, The Granby Mining Company Limited obtained an option on the Lorraine from Kennco, and have conducted detailed geological mapping, extensive trenching, and diamond and percussion drilling on the ore zone over the past four years. Numerous descriptions of this occurrence have been published (Armstrong, 1949; Black, 1949; Koo, 1968; Garnett, 1972B). It has been recently classified as a syenitic porphyry deposit by Sutherland Brown, *et al.* (1971).

Estimation of the drill-indicated reserves of this deposit is complicated by erratic mineralization and problems with distinguishing assay values due to secondary oxide mineralization from those due to primary sulphides. No official reserve figures have been made public to date.

GEOLOGIC SETTING: The Lorraine property lies mainly within the Duckling Creek Syenite Complex, a K-feldspar-rich phase of the Hogem batholith containing magmatic, migmatitic, and metasomatic rocks. The complex is an elongated body, approximately 3 miles by 20 miles, which trends northwest through the map-area. Numerous copper occurrences have been investigated within this complex, and the mineralization appears to be genetically related to the syenite intrusion (Garnett, 1972A).

Regional mapping of the southern Hogem batholith has indicated that the major intrusive units were emplaced as a differentiated mass during Late Triassic to Early Jurassic time. The syenitic phase intruded these units during the early Middle Jurassic, and a granitic phase crosscuts all previous units, possibly during the Early Cretaceous period (Garnett, 1974).

DETAILED GEOLOGY: The three intrusive phases documented on the regional scale are represented within the area of the Lorraine property shown on Figure 28. Monzonites and diorites (unit 2) of the main Hogem mass occur in the north half of the area. These basic rocks contain clinopyroxene as their dominant mafic constituent, with minor amounts of hornblende and biotite. Quartz, apatite, sphene, and magnetite are common accessories. In this vicinity, there are numerous orange patches evident within these otherwise fresh grey-black, medium-grained, hypidiomorphic textured rocks. This 'bleaching' increases near the border with the unit 4 syenite migmatite, and is attributed to potash metasomatism caused by the later syenite intrusion. The age relationship of unit 1 to these units is equivocal, but unit 2 clearly predates unit 4, and represents the main host rock present prior to syenite intrusion.

Unit 1 biotite pyroxenites occur as irregular pods and lenses within units 2 and 4. There is no similar occurrence of pyroxenite known elsewhere within the southern Hogem batholith, and its abundance in this particular zone is one of the major problems in unraveling the total intrusive evolution of this area. Field evidence indicates that pyroxenite lenses have shallow to moderately inclined dip directions north and south of the main ridges, occupying the main part of the cirque floors. Along the central ridge area, however, and especially in the mineralized zone, pyroxenite lenses parallel

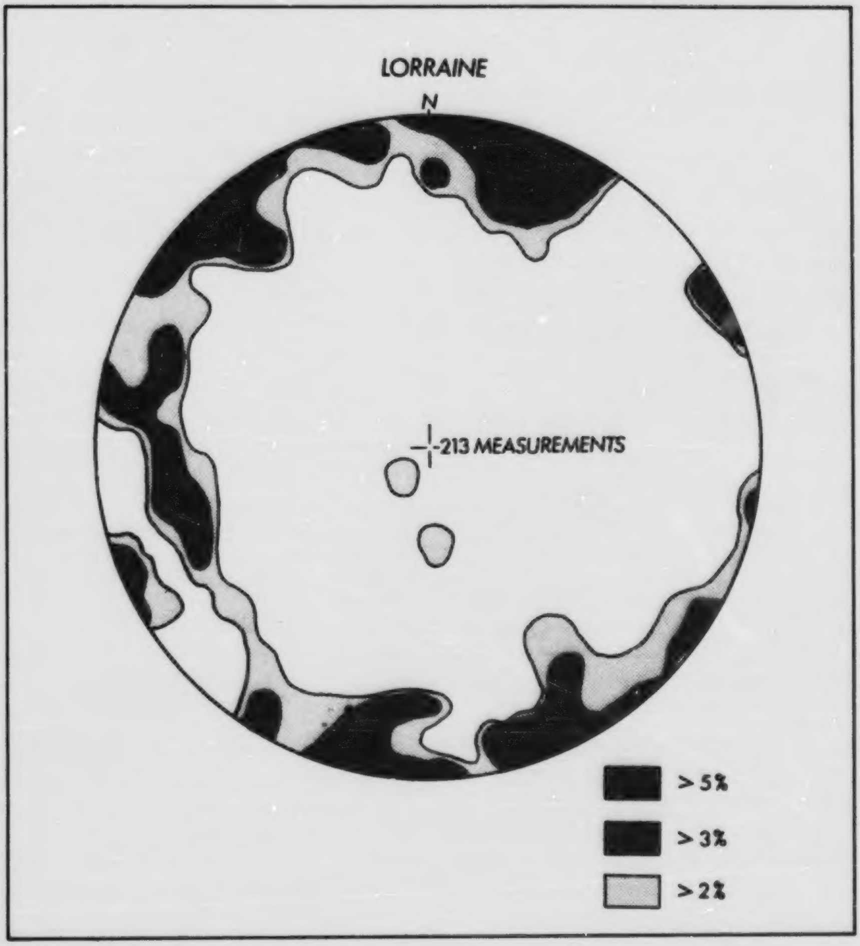


Figure 29. Poles to measured joints, Lorraine claims and vicinity.

well-defined steep migmatitic foliations. The pyroxenites within the unit 2 basic rocks contain euhedral crystals of clinopyroxene and lesser biotite enclosed by interstitial plagioclase. Within the unit 4 syenite migmatites, pyroxenite lenses have similar textures, but the interstitial material is K-feldspar. In both cases, these rocks appear to have intrusive, cumulative textures.

The unit 3 porphyries are mainly mafic-rich borders enveloping pyroxenites, exhibiting coarse porphyroblastic clusters of K-feldspar in a matrix of pyroxene and biotite with interstitial orthoclase. One tentative explanation is that unit 1 represents sill-like cumulate lenses which developed within the basic differentiating Hogem series in this area (unit 2) (*see* Harivel, 1972), and acted as porous sponges that were easily metasomatized by invading syenite magma, in part creating the unit 3 porphyries.

There is much variation within unit 4, ranging from pink, leucocratic, intrusive textured syenite, to dark grey foliated gneiss. Plate IX shows the migmatitic character of much of this unit, and the best mineralized sections are in the more mafic portions of similar rocks. The intrusive appearance of parts of this unit suggests that syenite magma intruded and metasomatized a body of layered monzonite-diorite and pyroxenite.

Orthoclase, microcline, and perthite are the major felsic constituents of unit 4, with minor twinned plagioclase usually present. In the mafic sections, biotite and clinopyroxene are most common, with accessory amphibole, apatite, sphene, and magnetite. Garnets occur locally as accessory constituents, commonly in light grey migmatites.

All the previously described units are cut by the fresh holofelsic syenite of unit 5, having textures varying from pegmatitic to aplitic. These dykes and sills clearly document a second pulse of syenite intrusion and, although there is rare chalcopyrite associated with unit 5, by far the bulk of the mineralization is spatially related to the unit 4 migmatites.

Fresh pink holofelsic granites (unit 6) are common in the vicinity of the Lorraine. These dykes mainly have north to northeasterly trends and may be controlled by the similarly oriented fracture pattern indicated on Figure 29. These fine to medium-grained dykes cut all previous units, but in some localities, dykes with granite cores grade into coarse-grained syenitic borders. This may indicate a close temporal relationship between the intrusion of units 5 and 6 dykes.

The light grey plagioclase feldspar porphyry dykes of unit 7 appear to be the last pulse of intrusive activity in this area. Minor chalcopyrite mineralization is associated with similar dykes cutting unit 3 monzonites on the high ridges immediately north of the map-area.

Some of the foliated rocks noted regionally within the Duckling Creek syenite body are schistose and paragneissic in appearance, and suggest that some remnants of pre-existing metasedimentary or volcaniclastic material may be included within the migmatitic complex. Although no compelling evidence for intrusion of 'basement' rocks was noted within this map-area, it still remains a possibility based on evidence elsewhere within the complex (Garnett, 1972A).

Three steeply dipping fracture patterns can be distinguished on Figure 29. The strongest pattern is at about 105 degrees and documents the youngest fracture system, crosscutting both the northeast-trending dykes and fractures. These fractures (from 050 degrees to 075 degrees) represent the second strongest fracture set while a weaker maxima occurs at 000 degrees, dipping 60 to 70 degrees to the east.

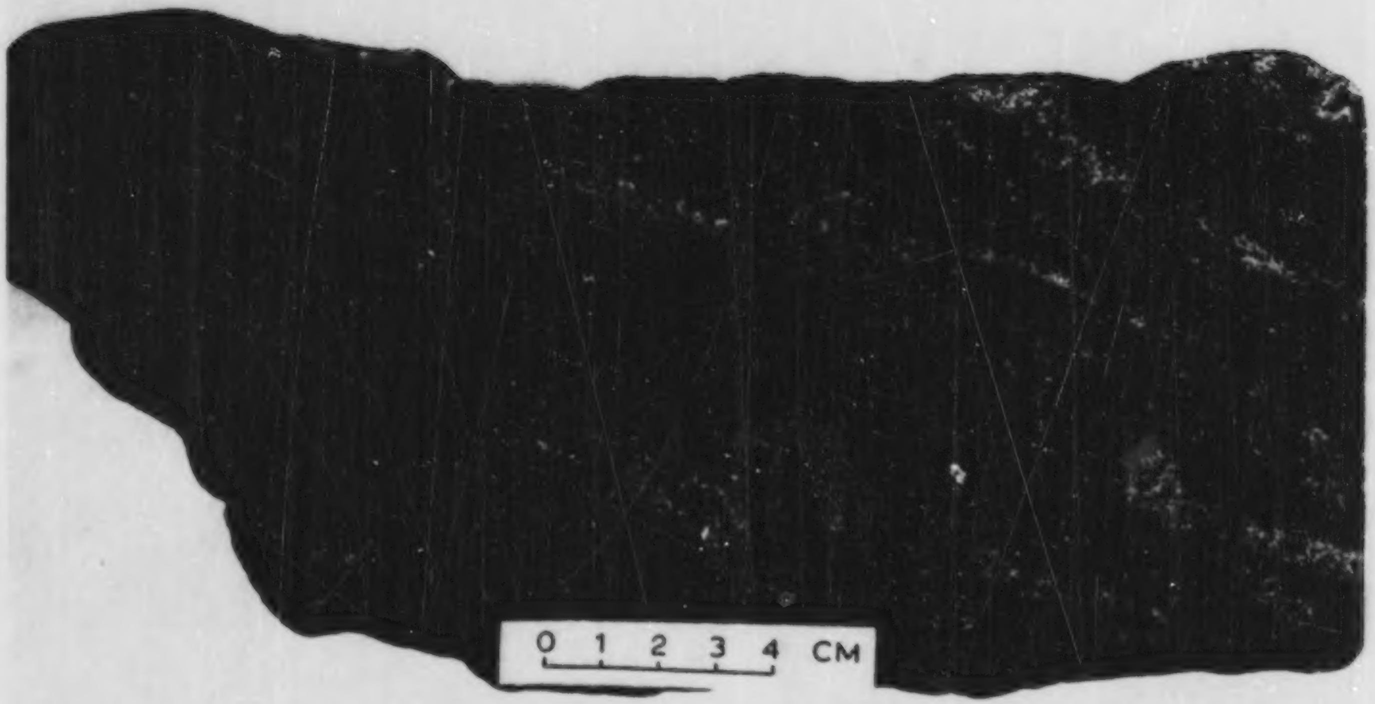


Plate IX. Lorraine property, typical syenite migmatite (unit 4) from main mineralized zone. Light areas are pink holofelsic syenite dykelets; dark areas are fine-grained biotite-rich mafic zones containing disseminated chalcopyrite and bornite.

Faults have been determined by a combination of airphoto interpretation and brecciation noted during mapping. Numerous highly fractured zones are apparent, especially within the trenched area of the main mineralized zone. The majority of slickensides noted in such localities show shallow orientations.

MINERALIZATION AND ALTERATION: The best mineralized sections within the Lorraine orebody have several common criteria.

(1) They occur within the foliated syenitic migmatites.

(2) They occur mainly in the mafic-rich portions of the migmatites.

(3) Mineralization within these zones is predominantly disseminated chalcopyrite and bornite, although veinlets and fracture fillings of these primary sulphides are occasionally present.

(4) The significant mineralization is associated with intense secondary biotite and chlorite growth, pervasive potash feldspathization and sericitization of all feldspars, and the presence of accessory epidote and magnetite.

A symmetrical mineral zonation around this orebody has been previously described (Koo, 1968), but the present mapping was not able to confirm any uniform patterns. Rusty pyritized areas occur within the northeast periphery of the migmatite, but no clear cut pyrite halo has been mapped. Although some mineral zonation is present within local mineralized zones ranging from bornite-rich cores to pyrite-chalcopyrite peripheries, the predominance of magnetite over pyrite and the presence of bornite on this property indicates a sulphur-poor mineralizing environment. The mineralized sections appear as lenses erratically distributed through otherwise identically appearing, poorly mineralized syenitic migmatites.

Figure 30 shows the trenching across the main mineralized area and the various drilling programmes designed to evaluate this zone. Section A-B (Fig. 31) is a diagrammatic interpretation of the spatial association between significant zones of mineralization and the surrounding migmatitic rocks. The diagram is based on information obtained from examination of drill core of the indicated holes, together with study of existing drill logs and assay results supplied by The Granby Mining Company Limited. The interpretation that mineralized sections (approximate range 0.5 per cent to 1.0 per cent copper) are erratically distributed throughout the zone seems inescapable. The steeply dipping nature of these zones and their corresponding lack of horizontal correlation remains speculative.

The steepening of the pyroxenite lenses within a narrow northwest-trending belt in the vicinity of the central mineralized zone, as indicated on Figure 31, may be more apparent than real. There is no doubt that the migmatitic foliation planes have steep to vertical dips in this area. If these planes represent flow foliations along the core zone of the syenite intrusion, the resulting strong fabric could obscure or obliterate an original shallow pyroxenite layering which it intruded and feldspathized. The steep orientations of foliations measured in trenches at surface are considered by the writer to reflect the overall structural control of the mineralization whether originating by strong core zone intrusive flow, presence of remnants of steeply dipping basement rocks, or fault rotation.

Malachite-stained fractures are very common within these zones of primary sulphide concentration and contribute to the assay values. However, malachite staining is also common along fractures cutting barren syenites elsewhere on the property. Many of the fractures, which still contain primary sulphides along with malachite, contain fine leucosyenite veins. There must be a distinction made between malachite-filled fractures of

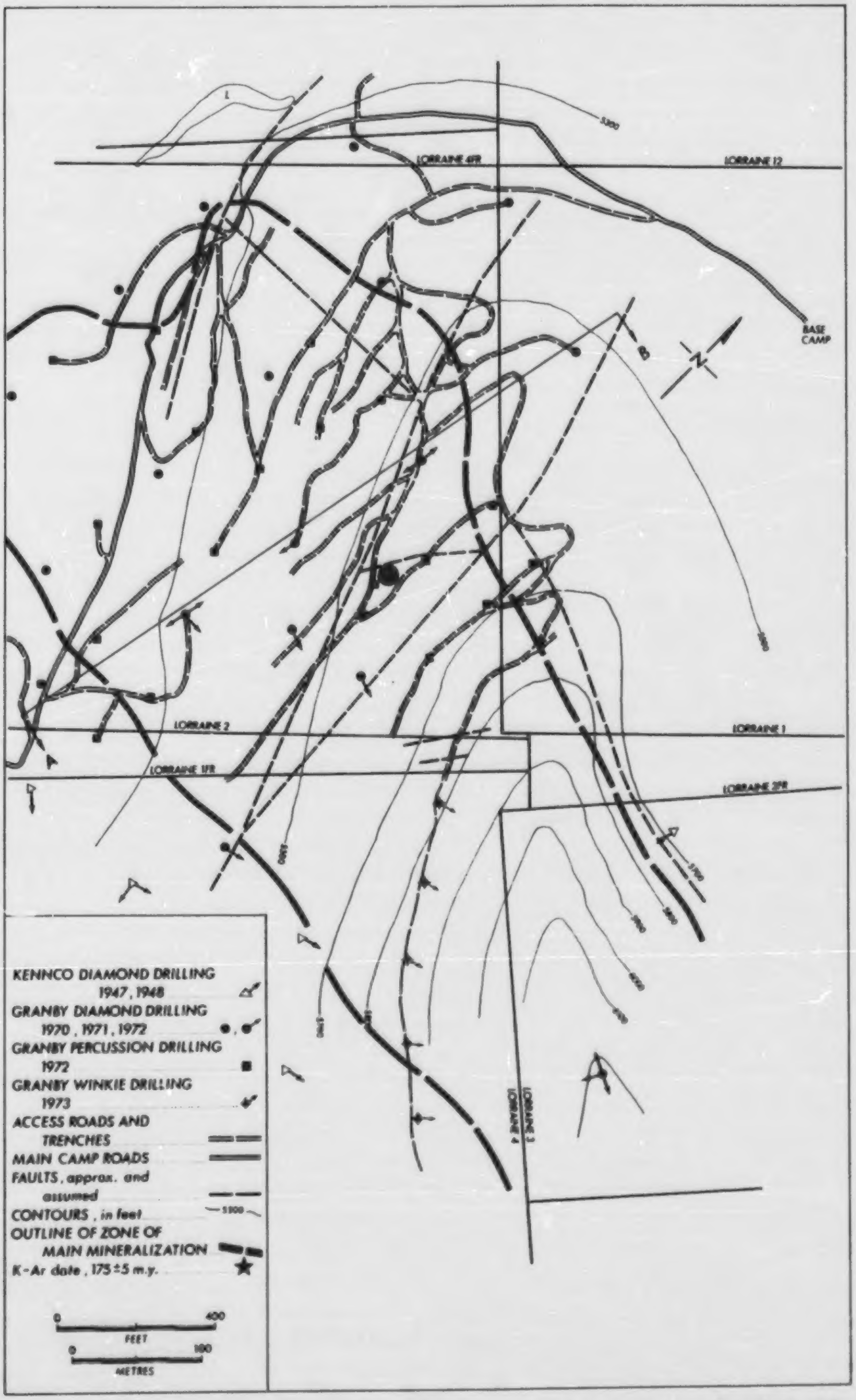

LORRAINE 4FR
LORRAINE 12
BASE CAMP
N
B
A
LORRAINE 2
LORRAINE 1
LORRAINE 1FR
LORRAINE 2FR
LORRAINE 3
LORRAINE 4
5300
KENNCO DIAMOND DRILLING 1947, 1948
GRANBY DIAMOND DRILLING 1970, 1971, 1972
GRANBY PERCUSSION DRILLING 1972
GRANBY WINKIE DRILLING 1973
ACCESS ROADS AND TRENCHES
MAIN CAMP ROADS
FAULTS, approx. and assumed
CONTOURS, in feet
OUTLINE OF ZONE OF MAIN MINERALIZATION
K-Ar date, 175±5 m.y.
0
400
FEET
0
100
METRES

Figure 30. Lorraine, drill sites and trenching, main mineralized zone (locations only approximate).

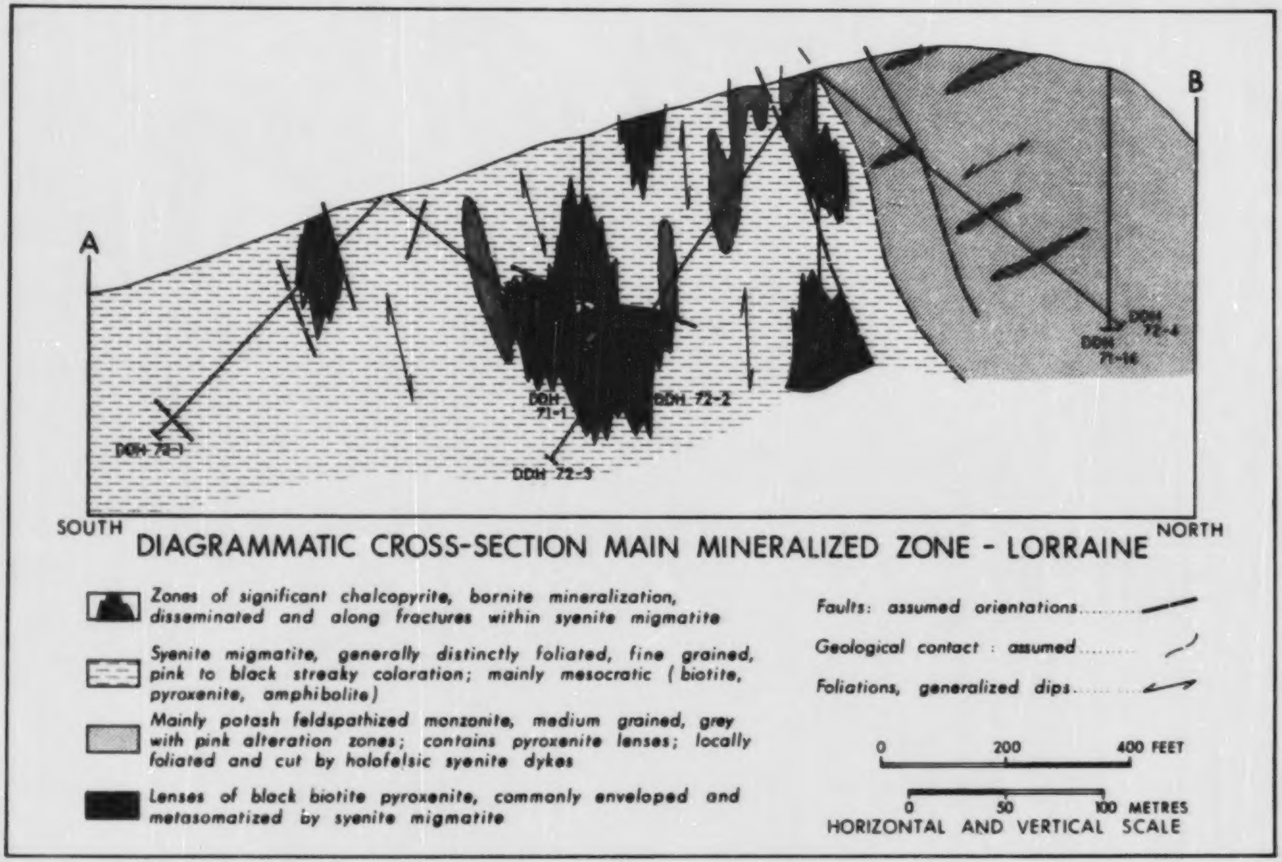

A
B
SOUTH
NORTH
DDH 72-1
DDH 71-1
DDH 72-2
DDH 72-3
DDH 72-4
DDH 71-16
DIAGRAMMATIC CROSS-SECTION MAIN MINERALIZED ZONE - LORRAINE
Zones of significant chalcopyrite, bornite mineralization, disseminated and along fractures within syenite migmatite
Syenite migmatite, generally distinctly foliated, fine grained, pink to black streaky coloration; mainly mesocratic (biotite, pyroxenite, amphibolite)
Mainly potash feldspathized monzonite, medium grained, grey with pink alteration zones; contains pyroxenite lenses; locally foliated and cut by holofelsic syenite dykes
Lenses of black biotite pyroxenite, commonly enveloped and metasomatized by syenite migmatite
Faults: assumed orientations
Geological contact : assumed
Foliations, generalized dips
0
200
400 FEET
0
50
100 METRES
HORIZONTAL AND VERTICAL SCALE

Figure 31. Lorraine, diagrammatic cross-section, main mineralized zone.

altered, *in situ* primary sulphides and malachite-stained fractures due to leaching, transport, and later precipitation on fractures removed from the zones of significant primary sulphide mineralization. The majority of malachite-stained fractures appears to fall into the latter category.

The predominance of disseminated sulphides over fracture-filling primary mineralization and the strong spatial correlation of foliated syenite with copper sulphides have led to the interpretation that copper-bearing solutions were genetically associated with the syenites which intruded basic rocks of the Hogem batholith in lower Middle Jurassic time. A K-Ar age determination on unit 1 biotite pyroxe ite cut by syenite dykelets yielded a date of 175±5 m.y. (see location, Fig. 30). This date is considered to indicate the minimum age of the syenitic intrusion and the maximum age of sulphide mineralization at the Lorraine. It substantiates the previous date (170±8 m.y.) taken by Koo (1968) on similar material from this general area.

WORK DONE:

Surface diamond drilling, eight Winkie holes totalling 911 feet on Lorraine 4 (depths of holes ranged from 4 feet to 182 feet); trenching, 2,100 feet on Lorraine 2, 4, and 1 Fraction.

REFERENCES:

Armstrong, J. E. (1949), Fort St. James Map-Area, Cassiar and Coast Districts, B.C., *Geol. Surv., Canada,* Mem. 252; Black, J. M. (1949), Duckling Creek, *Minister of Mines, B.C.,* Ann. Rept., 1949, pp. 98-102; Garnett, J. A. (1972A), Preliminary Geological Map of Duckling Creek Area, *B.C. Dept. of Mines & Pet. Res.,* Preliminary Map No. 9; Garnett, J. A. (1972B), Lorraine, *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, pp. 215-217; Garnett, J. A. (1974), Geology and Copper-Molybdenum Mineralization in the Southern Hogem Batholith, North Central B.C., *C.I.M,* Bull., in press; Harivel, C. (1972), Aspects of the Geology and Petrology of an Area within the Hogem Batholith, *U.B.C.,* unpublished B.Sc. Thesis, 44 pp.; Koo, Ja Hak (1968), Geology and Mineralization in the Lorraine Property Area, Omineca Mining Division, B.C., *U.B.C.,* unpublished M.Sc. Thesis, 107 pp.; Sutherland Brown, A., Cathro, R. J., Panteleyev, A., and Ney, C. S. (1971), Metallogeny of the Canadian Cordillera, *C.I.M.,* Bull., Vol. 64, No. 709, pp. 37-61; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 455; Assessment Report 4850.

JO ANN (Fig. D, No. 6)

LOCATION:	Lat. 55° 57′ Long. 125° 29′ (93N/14W) OMINECA M.D. Thirty miles west-northwest of Germansen Landing, 13 miles northwest of the junction of Duckling Creek and the Omineca River, between 3,000 and 4,000 feet elevation.
CLAIMS:	JO ANN 1 to 10, 18, 20 to 25, 26.
OWNER:	UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby.
DESCRIPTION:	The claims are almost entirely soil covered. One outcrop of hybrid basic diorite was observed. These claims cover about 1 mile of contact between intrusive syenites and more basic K-feldspar hybrid monzonite.

(93N/14W, 13E)

WORK DONE: Ground magnetometer survey, 13 line-miles covering all claims; grid and frequency-domain IP survey, 2 line-miles covering Jo Ann 5, 7-10, 18, 20-23; surface diamond drilling, two holes totalling 250 feet on Jo Ann 7.

REFERENCES: Assessment Reports 4273, 4676.

TAM (93N-93) (Fig. D, No. 119)

LOCATION: Lat. 56° 00′ Long. 125° 30′ (93N/14W, 13E; 94C/3, 4)
OMINECA M.D. Thirty-five miles northwest of Germansen Landing, on Haha Creek, at approximately 6,000 feet elevation.

CLAIMS: TAM 1 to 20, HAM 1 to 52, REM 1 to 94, AMP 1 to 13.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby.

METAL: Copper.

DESCRIPTION: Chalcopyrite occurs mainly as disseminations within foliated syenites cutting hybrid diorites and monzonites of the Hogem batholith.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering Rem 1-94 and 1 inch equals 400 feet covering Tam 1-20 and Ham 1-52; ground magnetometer survey, 38 line-miles covering Tam 1-20, Amp 1-7, Rem 1-30, and Ham 1-52; geochemical soil survey, 1,900 samples, 70 line-miles covering Rem 1-94, Ham 1-52, Tam 1-20, and Amp 1-7; surface diamond drilling, two holes totalling 250 feet on Ham 47.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 454; Assessment Report 4737.

BOX (VALLEY) (93N-6) (Fig. D, No. 89)

LOCATION: Lat. 55° 52′ Long. 125° 12′ (93N/14E)
OMINECA M.D. Twenty-one miles west of Germansen Landing, straddling the Uslika Lake road.

CLAIMS: BOX 1 to 10, 15 to 24, 29 to 38, 43 to 62, BOX 1 to 4, 7 to 10, 13 to 16, 19 to 26 Fractions.

OWNER: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver.

METAL: Copper.

DESCRIPTION: Mineralization consists of disseminated chalcopyrite in the country rock, volcanic rocks, and in granitic dykes.

WORK DONE: 1972 – linecutting and IP survey, approximately 7 line-miles; 1973 – surface diamond drilling, three holes totalling 582 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 211; Assessment Reports 3879, 4432.

VERNON, BUD (93N-10, 75, 76) (Fig. D, No. 90)

LOCATION: Lat. 55° 58′ Long. 124° 48′ (93N/15)
OMINECA M.D. North of the Omineca River, 5 miles north of Nina Lake, between 3,600 and 3,900 feet elevation.

CLAIMS: CRIN 1 to 56.

OWNER: COMINCO LTD., 200 Granville Square, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: Sphalerite and galena occur in Middle Devonian carbonates lying between members of the Wolverine complex and the Nina Lake volcanic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims; geochemical soil survey, 1,095 samples taken at 100 by 400-foot grid spacing covering Crin 1-4, 14-16, 25-31, 36, 37, 39-51, 55, 56.

REFERENCE: Assessment Report 4815.

OSI (93N-170) (Fig. D, No. 91)

LOCATION: Lat. 56° 00′ Long. 124° 46′ (93N/15W; 94C/2W)
OMINECA M.D. Seven miles north of Nina Lake, between 4,500 and 5,000 feet elevation.

CLAIMS: OSI 1 to 24.

OWNER: S.E.R.E.M. Ltd. in trust with Bergminex Associates.

OPERATOR: S.E.R.E.M. LTD. on behalf of BERGMINEX ASSOCIATES, 770, 2100 Drummond Street, Montreal, P.Q. H3G 1X1.

METALS: Lead, zinc (silver).

DESCRIPTION: The claims are underlain by a massive, thick-bedded, grey to black limestone unit with fine grey, sometimes brecciated, coarse white-cream dolomitic zones which is overlain by grey slates (Middle Devonian ?). Mineralization includes disseminated fine galena, coarse light sphalerite, and minor pyrite in stockworks crosscutting the carbonate unit. Iron oxide and cerussite occur in bleached stockwork.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Osi 1-8; geochemical survey, 714 soil samples taken at 400 by 200-foot grid spacing on Osi 1-24 and 200 by 50-foot grid spacing on Osi 2 and 17 and 42 rock samples taken at irregular intervals; linecutting on Osi 1-24.

REFERENCE: Assessment Report 4955.

SHEILA (93N-172) (Fig. D, No. 94)

LOCATION: Lat. 55° 54′ Long. 124° 42′ (93N/15E)
OMINECA M.D. Nine miles due north of Germansen Landing, on the south end of Echo Lake, between 4,000 and 5,000 feet elevation.

CLAIMS: SHEILA 1 to 48.

OWNER: DOUGLAS STELLING, Bag 25, Fort St. James.

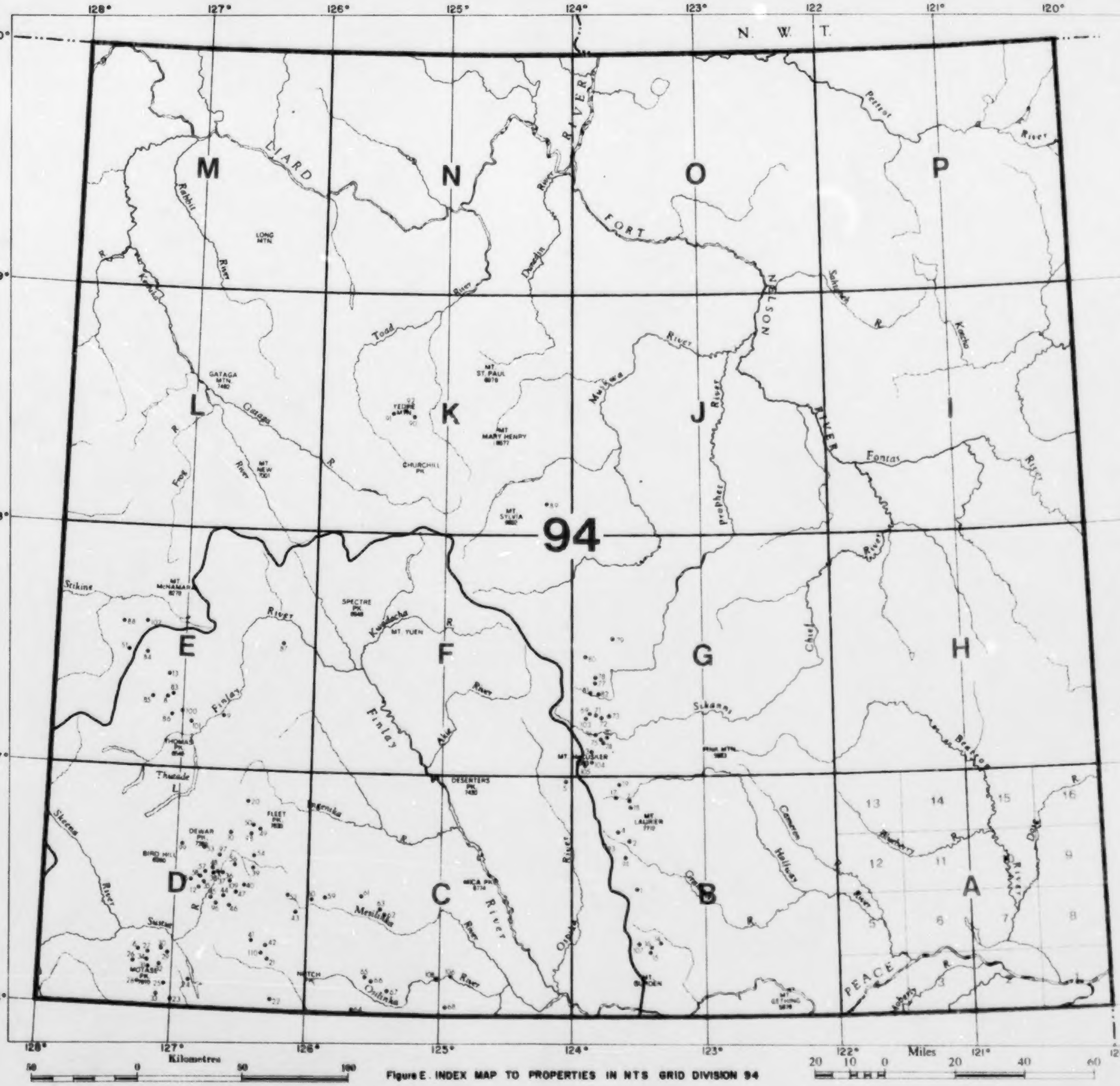
METALS: Lead, zinc.

DESCRIPTION:	The claims are underlain by slate to the south and limestone to the north. The limestone nearest the contact is dolomitized and in places mineralized. The mineralization consists of sphalerite and galena with barite in dolomite breccia near the limestone-slate contact.
WORK DONE:	Geochemical survey, 325 soil samples taken at 100 by 200-foot grid spacing on Sheila 27-30; 31 soil samples taken at 200-foot intervals along claim lines; and 14 rock samples taken across the showing.
REFERENCE:	Assessment Report 4899.

PINE PASS 93O

NICK (93J-14) (Fig. D, No. 148)

LOCATION:	Lat. 55° 00′	Long. 123° 17′	(93J/14W; 93O/3W)
	Report on this property in section 93J/14W.		


128°
127°
126°
125°
124°
123°
122
121°
120°
60°
59°
58°
57°
56°
N. W. T.
M
N
O
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K
J
I
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F
G
H
D
C
B
A
94
LIARD
RIVER
FORT
NELSON
RIVER
Rabbit River
Kechika
Toad River
Dunedin
Petitot
River
Sahtaneh R.
Kwokullie
Muskwa
River
Prophet
Fontas
River
Gataga
R.
Frog
River
Sikanni
Chief
River
Beatton
Stikine
Finlay
Kwadacha
Akie
River
Thutade L.
Ingenika R.
Mesilinka
Osilinka
River
Omineca
Skeena
River
Sustut
Ospika
River
Cameron
Halfway
Blueberry
River
Doig
River
PEACE
Moberly
LONG MTN.
GATAGA MTN. 7482
MT. ST. PAUL 8870
YETER MTN.
MT. MARY HENRY 9577
CHURCHILL PK.
MT. NEW 7001
MT. SYLVIA 9660
MT. McNAMARA 8270
SPECTRE PK. 8548
MT. YUEN
THOMAS PK. 8549
MT. WALKER
PINK MTN. 5903
DESERTERS PK. 7430
FLEET PK.
DEWAR PK.
BIRD HILL 6060
MICA PK. 6750
MT. LAURIER 7710
NOTCH PK.
MOTASE PK.
MT. BICKFORD
MT. GETHING
13
14
15
16
12
11
9
5
6
7
8
3
2
1
128°
127°
126°
125°
124°
123°
122°
121°
120°
Kilometres
50
0
50
100
Miles
20
10
0
20
40
60

Figure E. INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 94

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NORTHEAST BRITISH COLUMBIA
(NTS Division 94 Figure E)

HALFWAY RIVER 94B

BRIN (Fig. E, No. 107)

LOCATION: Lat. 56° 19' Long. 123° 30' (94B/5E, 6W)
LIARD M.D. Forty miles south-southeast of Robb Lake, extending from Gauvreau Peak, southeast almost to the West Nabesche River, thence northeast to the Nabesche River.

CLAIMS: BRIN, VALE, ALPINE, KNOB, LOW, QUAD, PAIR, totalling approximately 160.

OWNER: BRITISH NEWFOUNDLAND EXPLORATION LIMITED, 704, 602 West Hastings Street, Vancouver.

DESCRIPTION: The broad Bernard anticline plunges steeply south through the middle of the claim area and is flanked on the west by a tight south-plunging syncline. Nonda dolomite and interbedded sandstone and quartzite form the core of the anticline, and Muncho-McConnell dolomite, Wokkpash sandstone, and Stone and Dunedin (?) dolomites wrap successively around the nose. The Dunedin (?) Formation is overlain by dark shaly limestone containing a thin layer of black shale. This sequence is repeated to the southeast by a northeast-striking high-angle fault. Dark shales and intercalated andesite tuff beds, probably of the Kechika Group, are thrust onto the syncline from the west.

WORK DONE: Surface geological mapping, 1:50,000 covering all claims; geochemical silt survey, 258 samples taken at approximately 200-foot intervals from three drainage systems.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 462; Assessment Reports 4204, 4874.

WIND (94B-10) (Fig. E, No. 15)

LOCATION: Lat. 56° 16' Long. 123° 26' (94B/6W)
LIARD M.D. North of the West Nabesche River, 7 miles due north of Mount Burden, between 5,800 and 5,900 feet elevation.

CLAIMS: BLOW 1 to 44.

OWNER: B.X. Developments Limited.

OPERATOR: COMINCO LTD., 2200, 200 Granville Square, Vancouver.

METALS: Zinc, (lead).

DESCRIPTION: Massive dolomites of the Silurian Nonda Formation are overlain by Lower (Muncho-McConnell Formation, arenaceous dolomite, 250 feet), Middle (Stone Formation, arenaceous dolomite, 1,145 feet; Pine Point Formation, fossiliferous and massive carbonates, 662 to 693 feet; Slave Point Formation, fossiliferous carbonates, 183 to 220 feet), and Upper Devonian (Beaverhill Lake Formation, limestone and shale; Muskwa Formation, shale) strata. Mineralization occurs in Pine Point (minor) and Slave Point (major) Formations, mainly sphalerite with minor galena.

(94B/6W)

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims; surface diamond drilling, six holes totalling 995 feet on Blow 5, 7, and 18.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 462.

DEV (94B-11) (Fig. E, No. 16)

LOCATION: Lat. 56° 17' Long. 123° 24' (94B/6W)
LIARD M.D. Nabesche River watershed, 8.5 miles due north of Mount Burden, at approximately 6,500 feet elevation.

CLAIMS: DEV 264 to 303.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: The claim area is underlain by limestone and dolomite of the Devonian Stone and Dunedin Formations. Mineralization occurs in minor sphalerite and galena.

WORK DONE: Surface geological mapping, 1:10,000 covering all claims; linecutting, 21 miles of grid; geochemical soil and rock-chip survey, approximately 500 samples taken at 200 by 400-foot grid spacing covering Dev 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, and 284-303.

REFERENCE: Assessment Report 4791.

NABE (Fig. E, No. 14)

LOCATION: Lat. 56° 18' Long. 123° 23' (94B/6W)
LIARD M.D. Between West Nabesche River, and east of and north to the Nabesche River property, at approximately 6,100 feet elevation.

CLAIMS: NABE 7, 9 to 47, 49, 51 to 56, 61 to 72, 86, 87, 118 to 141.

OWNER: COMINCO LTD., 2200, 200 Granville Square, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: Sphalerite occurs in breccias contained within carbonate rocks of Upper Devonian age.

WORK DONE: Geochemical soil survey, 118 samples covering Nabe 37-40; surface diamond drilling, three holes totalling 566 feet on Nabe 35, 36, and 38.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 462.

LINDA, ACE (Fig. E, No. 93)

LOCATION: LINDA 1 to 16, 26, 27, 31, 32 and ACE 61 to 70, 93 to 100 –
Lat. 56° 42' Long. 123° 44' (94B/12E)
LIARD M.D. One mile northeast of Lady Laurier Lake, at approximately 6,000 feet elevation.
ACE 31, 33, 35, 37, 39, 51 to 60, 85 to 90 –
Lat. 56° 41' Long. 123° 42' (94B/12E)
LIARD M.D. On Reef Mountain, 1 mile east of Lady Laurier Lake, at approximately 6,000 feet elevation.

(94B/12E, 11W)

CLAIMS: LINDA 1 to 16, 26, 27, 31, 32, ACE 31, 33, 35, 37, 39, 51 to 70, 85 to 90, 93 to 100.

OWNER: BRITISH NEWFOUNDLAND EXPLORATION LIMITED, 704, 602 West Hastings Street, Vancouver.

METAL: Zinc.

DESCRIPTION: The claims northeast of Lady Laurier Lake are underlain largely by dark shales, with lensy intercalations of quartzite, dolomite, and limestone. Most of the rocks are assigned to the Nonda Formation. They have been thrown into a tight syncline and thrust eastward onto the Besa River Formation. The claims on Reef Mountain are mainly underlain by a greatly thickened momoclinal sequence of Stone and Dunedin dolomite breccia. To the northwest a normal fault separates this sequence from a dome of Nonda-banded dolomite.

WORK DONE: Surface geological mapping, 1 inch equals 20,000 feet covering all claims; geochemical survey, 9 rock samples, 82 silt samples, and 19 soil samples covering claims on Reef Mountain.

REFERENCE: Assessment Report 4772.

YEW (Fig. E, No. 1)

LOCATION: Lat. 56° 36.5'-39.5' Long. 123° 28'-32.5' (94B/12E, 11W)
LIARD M.D. One hundred and ten miles west-northwest of Fort St. John, the claim group centre is 2 miles southwest of the junction of Horn Creek and the Graham River.

CLAIMS: YEW 7 to 12, 35, 37 to 42, 65 to 70, 89 to 94 (Anchor Mines Ltd.), YEW 13 to 20, 43 to 48, 71 to 76, 78, 95 to 98 (Advent Developments Inc., formerly Alwin Mining Co. Ltd.), YEW 1 to 6, 29 to 34, 36, 57 to 64, 85 to 88 (Pacific Jade Industries Ltd., formerly Geneva Resources Ltd.), YEW 21 to 28, 49 to 56, 77, 79 to 84 (Bralorne Resources Limited).

OWNERS: ANCHOR MINES LTD., 1250 One Bentall Centre, 505 Burrard Street, Vancouver; ADVENT DEVELOPMENTS INC., 1250 One Bentall Centre, 505 Burrard Street, Vancouver; PACIFIC JADE INDUSTRIES LTD., 660 One Calgary Place, Calgary, Alta.; BRALORNE RESOURCES LIMITED, 1005 One Bentall Centre, Vancouver.

DESCRIPTION: The northern portion of the claims is underlain by Besa River Formation shales and the southern portion by Middle Devonian (Dunedin Formation ?) carbonate. The contact between the rock units is a major westerly dipping thrust fault which strikes north-northwest.

WORK DONE: 1972 – geochemical survey, 1,150 samples collected at 200-foot intervals on 800-foot lines and analysed for lead, zinc, and cadmium.

REFERENCES: Assessment Reports 4143, 4291, 4293, 4295.

BRIN (Fig. E, No. 94)

LOCATION: Lat. 56° 40′ Long. 123° 35′ (94B/12E)
LIARD M.D. Covering an area 10 miles long by 3 miles wide, extending northwest and centred 3 miles east of Lady Laurier Lake.

CLAIMS: BRIN 264 to 321, 326 to 337, 339 to 451, WEST 1 to 5.

OWNER: BRITISH NEWFOUNDLAND EXPLORATION LIMITED, 704, 602 West Hastings Street, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: The claims are underlain by Nonda, Stone, and Dunedin dolomites and Besa River shales, which lie for the most part on the northeast flank of the Bernard anticline. This limb is broken by a steep thrust in the Nonda and by two cross-faults near the centre of the claims. To the northwest the anticline terminates in a small dome, and the northwest claims are underlain by shales. Between the two cross-faults the Dunedin dolomite is entirely brecciated, and southwest of a small lake contains some sphalerite and galena. To the southeast, on the northwest wall of a creek valley, Dunedin dolomite is strongly recrystallized and contains much secondary quartz near the upper contact; some galena and sphalerite are present.

WORK DONE: Surface geological mapping, 1:50,000 covering all claims; geochemical survey, 1,050 soil samples and 239 rock samples covering Brin 345-348 and 400-403.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 462; Assessment Reports 4142, 4772, 4873.

BERTHA (Fig. E, No. 3)

LOCATION: Lat. 56° 59′ - 57° 13.5′ Long. 123° 44.5′ - 52.5′ (94G/4; 94B/13W)
Report on this property in section 94G/4.

ASH (Fig. E, No. 2)

LOCATION: Lat. 56° 42.8′-45.7′ Long. 123° 35.5′-38.7′ (94B/12E, 13E)
LIARD M.D. Approximately 115 miles west-northwest of Fort St. John, the centre of the claim group is 7 miles east-northeast of Mount Lady Laurier.

CLAIMS: ASH 9 to 18, 35, 37 to 44, 63 to 70, 72, 79 to 98 (Acheron Mines Ltd.), ASH 19 to 26, 45 to 52, 71, 73 to 78, 99, 100 (Advent Developments Inc., formerly Alwin Mining Co. Ltd.), ASH 1 to 8, 27 to 34, 36, 53 to 62 (Bralorne Resources Limited).

OWNERS: ACHERON MINES LTD., 107, 325 Howe Street, Vancouver; ADVENT DEVELOPMENTS INC., 1250 One Bentall Centre, Vancouver; BRALORNE RESOURCES LIMITED, 1005 One Bentall Centre, Vancouver.

DESCRIPTION: Shale and siltstone of the Upper Devonian Besa River Formation underlies the claim area.

(94B/13E)

WORK DONE: 1972 – geochemical survey, 1,333 samples taken at 200-foot centres along 800-foot lines and analysed for lead, zinc, and cadmium.

REFERENCES: Assessment Reports 4144, 4292, 4294.

BOB (Fig. E, No. 4)

LOCATION: Lat. 56° 45.6′-46.5′ Long. 123° 37.6′-39.8′ (94B/13E)
LIARD M.D. Approximately 120 miles west-northwest of Fort St. John, 6.5 miles easterly of Mount Lady Laurier.

CLAIMS: BOB 12, 14, 16, 18, 20, 31 to 40, 51 to 60.

OWNER: ANCHOR MINES LTD., 1250 One Bentall Centre, 505 Burrard Street, Vancouver.

DESCRIPTION: The claim group is underlain by shale and siltstone belonging to the Upper Devonian Besa River Formation.

WORK DONE: 1972 – geochemical soil and silt survey, 383 samples collected at 200-foot intervals along 800-foot lines and analysed for zinc and cadmium.

REFERENCE: Assessment Report 4296.

VAN, DOLL, LAST, FINE (Fig. E, Nos. 7 and 18)

LOCATION: Lat. 56° 52.5′-58.0′ Long. 123° 30′-38′ (94B/13E)
LIARD M.D. Approximately 9 miles east of Robb Lake.

CLAIMS: VAN 1 to 36, DOLL (50 claims), LAST 10 to 19, 22 to 28, FINE (50 claims), A 1 to 40, A 2 Fraction, B 1 to 41, NANCY 1 to 6 Fractions, FIR 1 to 40, WORTH 1 to 32, WAT 1 to 24, ITS 1 to 24, UKE 1 to 26, XIT 1 to 50, ZUK 1 to 40, YES 1 to 20, WOE 1 to 34, COKE 1 to 19, MDA 1 and 2, STP 1 to 6.

OWNER: T. Rolston.

OPERATORS: T. & C. MANAGEMENT LTD., 520, 602 West Hastings Street, Vancouver; TEXAL DEVELOPMENT LTD., 5th Floor, 134 Abbott Street, Vancouver; GOLD RIVER MINES LIMITED, 802, 1433 Burnaby Street, Vancouver.

DESCRIPTION: The property is underlain mainly by carbonate rocks and shales belonging to the Prophet Formation of Mississippian age. No mineralization was located.

WORK DONE: Airborne magnetometer survey and VLF EM survey, 500-foot ground clearance, line spacing approximately 1,000 feet.

REFERENCES: Assessment Reports 4391, 4392, 4519, 4520.

RON (94B-12) (Fig. E, No. 19)

LOCATION: Lat. 56° 59′ Long. 123° 41′ (94B/13E)
LIARD M.D. Six miles northeast of Robb Lake, at 5,000 feet elevation on a due south flowing tributary of Halfway River.

CLAIMS: RON 1 to 40.

(94B/13)

OWNER: BUCKHORN MINES LTD., 1000, 1055 West Hastings Street, Vancouver.

METALS: Zinc, lead, (iron).

DESCRIPTION: The principal showings involve medium to thick-bedded dolomite with argillaceous and sandy dolomite interbeds. The dolomite contains numerous brecciated horizons, some of them finely mineralized.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Ron 17-20; geochemical soil survey, 716 samples covering Ron 17-22 and 27-30; surface diamond drilling, four holes totalling 815 feet on Ron 19 and 20.

REFERENCE: Assessment Report 4196.

ROBB LAKE (94B-5) (Fig. E, No. 17)

LOCATION: Lat. 56° 55' Long. 123° 40' (94B/13)
LIARD M.D. Five miles northeast of Robb Lake, at approximately 5,000 feet elevation.

CLAIMS: AD, BELL, BM, CLEO, DEN, FBW, FG, JOSH, KIM, LD, LISA, MART, MB, MV, NMW, NORM, NU, REX, ROB, totalling approximately 661.

OWNERS: Ecstall Mining Limited, Barrier Reef Resources Ltd., and Arrow Inter-America Corporation.

OPERATORS: CORDILLERAN ENGINEERING LIMITED, ECSTALL MINING LIMITED, BARRIER REEF RESOURCES LTD., and ARROW INTER-AMERICA CORPORATION, c/o 1418, 355 Burrard Street, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: The area is underlain by a thick sequence of Lower and Middle Paleozoic sedimentary rocks, the most important being dolomite of the Middle Devonian Stone Formation. Sphalerite, galena, and some pyrite occur in brecciated dolomite, mostly within the Stone Formation.

WORK DONE: Time-domain IP survey, 11.5 line-miles covering Cleo 1-4, 105-108, 142, MV 73-87, 80, Rex 1 Fraction, Rob 15-17, 23, 41-44, 47, and Rob 57 Fraction; surface diamond drilling, 12 holes totalling 8,975 feet on Rob 16, 17, 41, 43, Cleo 1, 2, 107; and MV 23; grid cut, 9,200 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 463-473; Assessment Report 4554.

FORT GRAHAME 94C

OSI (93N-170) (Fig. D, No. 91)

LOCATION: Lat. 56° 00' Long. 124° 46' (93N/15W; 94C/2W)
Report on this property in section 93N/15W.

CHILDHOOD DREAM (94C-29) (Fig. E, No. 106)

LOCATION: Lat. 56° 10′ Long. 124° 54′ (94C/2W)
OMINECA M.D. Eight miles northeast of Wasi Lake, on the north side of Osilinka River, at approximately 4,000 feet elevation.
CLAIMS: Mineral Leases M-125 (CHILDHOOD DREAM, Lot 5748), M-128 (PAN RICH, ROSIE, BETSY, Lots 5749 to 5751).
OWNER: Lorne Ross.
OPERATOR: CARPIQUET MINES LTD., Box 157, Ashcroft.
METALS: Lead, zinc.
DESCRIPTION: Pyrite, galena, and sphalerite occur as replacement deposits along shears in limestone and dolomite.
WORK DONE: Geochemical soil survey, 145 samples, 5.5 line-miles covering all claims; linecutting, 5.5 miles of grid.
REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1930, p. 152; 1952, p. 103; *Geol. Surv., Canada,* Mem. 274, p. 200.

GREG (Fig. E, No. 68)

LOCATION: Lat. 56° 03′ Long. 125° 01′ (94C/3E)
OMINECA M.D. Two miles northeast of Wasi Lake.
CLAIMS: GREG 1 to 6, 11 to 14.
OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver V6C 1A5.
DESCRIPTION: The claims extend across the contact between a limestone division and a volcanic division of the Cache Creek Group.
WORK DONE: Surface geological mapping, 1 inch equals 300 feet; ground magnetometer survey, 6.5 line-miles; geochemical soil survey, 307 samples taken at 100 by 400-foot grid spacing covering all claims.
REFERENCE: Assessment Report 4620.

BEVELEY (94C-23) (Fig. E, No. 108)

By J. A. Garnett

LOCATION: Lat. 56° 10′ Long. 125° 03′ (94C/3E)
OMINECA M.D. One-half mile north of the Osilinka River, 3 miles east of the junction of Tenakihi Creek.
CLAIMS: GAEL 1, 2, 4 to 11, GAEL 3 Fraction.
OWNER: R. HALL.
DESCRIPTION:

INTRODUCTION: The Beveley property is situated near the top of a 4,000-foot high limestone ridge on the north side of the Osilinka River valley, about 3 miles east of its junction with Tenakihi Creek. The claims were investigated over a four-day period in August, 1973 on the invitation of R. Hall, the owner of several claims within the main mineralized area of this property. Most of the trenches were traversed, and systematic chip samples of the best exposed mineralization were taken. Many of the trenches are partially sloughed. In addition, natural outcrops are scarce, although overburden is

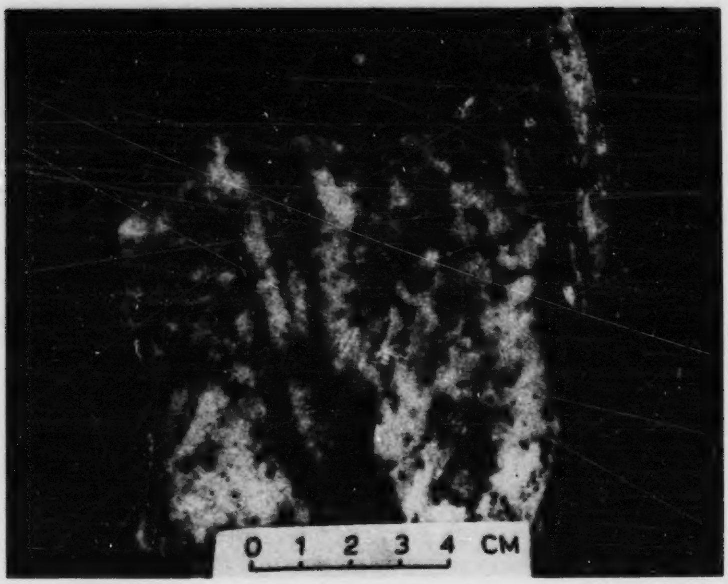


Plate XA. Beveley, veinlets of galena occur as bands and disseminations in dolomite-barite rock. The bands may follow relict bedding. Euhedral crystals of barite can be seen in the centre of the photograph. Note also the post-mineral fracture offsetting galena bands (from trench E4E-159).

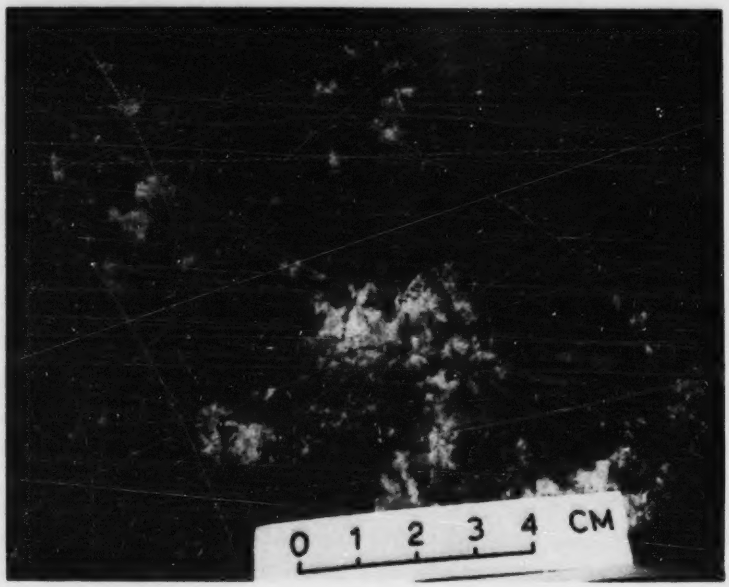


Plate XB. Beveley, fine infillings of galena throughout matrix of fault contain rusty brown ferrodolomite and barite and light grey dolomite (from trench G1-275).

generally less than 3 feet thick in this vicinity. No attempt was made to map the area in any detail, but representative samples of mineralization and typical rock types were taken, and bedding and cleavage attitudes were recorded. D. V. Lefebure assisted the writer in the field, and subsequently conducted detailed petrographic studies on the collected samples. The results of his study are contained in an undergraduate thesis completed at Queen's University (Lefebure, 1974) and certain pertinent aspects of this research are incorporated in this report.

HISTORY: Galena was discovered on this property by Alexander Leggatt, prospecting for Cominco Ltd. in 1946. From 1947 to 1951, Cominco mapped the property and completed 8,000 feet of hand trenching and 12 diamond-drill holes. During this period, the property was visited briefly and reported on by Roots (*Geol. Surv., Canada,* 1954) and McCammon (*Minister of Mines, B.C.,* Ann. Rept., 1952).

Cominco's claims lapsed in 1962. No further work was done until 1966, when a syndicate was formed (E. D. Vinnedge and Associates), of which Mr. Leggatt was a principal. This group opened up additional zones of mineralization with a bulldozer, and in 1967 optioned the property to Donna Mines Ltd. Over a two-year period, they completed the following work:

(1) Approximately 10 miles of access road from Tenakihi Creek to a central base camp at elevation 5,000 feet.
(2) Geological and geophysical surveys.
(3) 6,700 feet of bulldozer trenching.
(4) 19,000 feet of backhoe trenching.
(5) A 1,000-foot adit under E section.
(6) One 200-foot percussion hole and three diamond-drill holes totalling 500 feet.

Since 1969 there has been no significant work done on the property and it is believed that the option has been dropped by Donna Mines Ltd., and all accumulated data turned back to R. Hall, one of the original partners of E. D. Vinnedge and Associates.

GEOLOGY: Mineralization on this property occurs within the 'limestone' sequence of the Ingenika Group. This group forms a sequence 18,000 feet thick that consists of four dominant rock types and their metamorphic derivatives. These are, respectively, greywackes altered to slates, phyllites, schists, and quartzites; sandstones and quartzites; conglomerates; and limestones. This sequence was deposited in Late Proterozoic and Early Cambrian time and subsequently underwent low-grade regional metamorphism (Roots, 1954).

Examination of the rock types in the trenched areas indicated the following mappable units in order of abundance: white to grey dolomite, grey to black limestone, brown ferrodolomite, and minor brown sericite schist and phyllite. Barite lenses and stringers cut the limy units. All these units are highly fractured and folded. Bedding-cleavage relationships together with measurement of minor fold orientations and related lineations

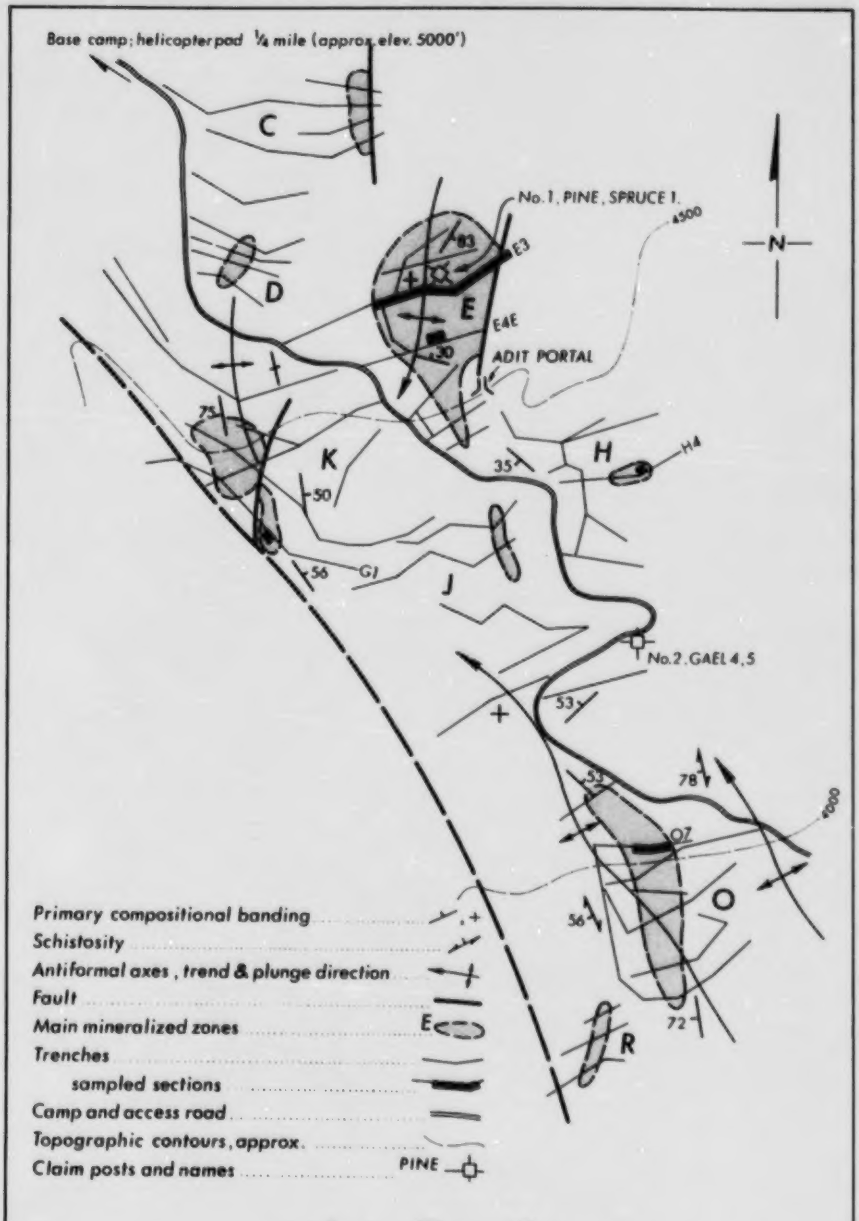

Base camp; helicopter pad ¼ mile (approx. elev. 5000')
C
D
E
K
H
J
O
R
N
No. 1, PINE, SPRUCE 1.
4500
E3
83
E4E
30
ADIT PORTAL
75
35
H4
50
56
G1
No. 2, GAEL 4, 5
53
53
78
OZ
4000
56
72
Primary compositional banding
Schistosity
Antiformal axes, trend & plunge direction
Fault
Main mineralized zones
E
Trenches
sampled sections
Camp and access road
Topographic contours, approx.
Claim posts and names
PINE
SCALE
0
300
600
FEET
SCALE
0
100
200
METRES
Base map, trench locations courtesy R. Hall

Figure 32. Beveley claims, sketch of main mineral zones.

TRENCH NO. AND FOOTAGE (0 footage at east end)	WIDTH (feet)	GOLD (oz. per ton)	SILVER (oz. per ton)	LEAD (per cent)	ZINC (per cent)	Ba (as per cent barite)
E3–5-11	6	Tr.	Tr.	Tr.	Tr.	----
E3–11-44	33	Tr.	Tr.	Tr.	Tr.	----
E3–68-93	25	Tr.	Tr.	0.01	0.02	----
E3–200-218	18	Tr.	Tr.	0.17	0.04	5.2
E3–218-249	31	Tr.	0.1	1.1	0.36	20.6
E3–249-269	20	Tr.	0.2	0.83	0.19	8.6
E3–269-296	27	Tr.	0.1	0.74	Tr.	22.8
E3–296-344	48	Tr.	0.1	1.3	0.11	15.0
E3–378-464N	86	Tr.	0.2	0.96	Tr.	30.1
E3–378-425S	47	Tr.	Tr.	0.01	Tr.	----
E4E–137-200	63	Tr.	Tr.	0.52	0.15	14.7
G1–300-320	20	Tr.	0.5	2.8	0.40	9.8
07–314-344	30	Tr.	0.4	1.4	0.20	----
07–344-363	19	Tr.	Tr.	0.25	0.30	17.2
07–363-386	23	Tr.	Tr.	0.28	0.01	----
07–410-430	20	Tr.	0.2	0.29	0.19	24.0
H4–100	selected grab	Tr.	28.0	9.2	0.10	----

indicate that this sequence has been folded into tight northwesterly to northerly trending, flexural flow folds with shallow, undulating plunge directions. Figure 32 illustrates this general interpretation, and also indicates a spatial relationship between hinge zones of antiforms and lenticular zones of mineralization that may be significant.

These observations may correlate with the interpretation that the major structure of the area is a northwesterly trending anticline plunging gently northward (McCammon, 1952).

MINERALIZATION: The main sulphide mineral noted in the trenches is galena, which occurs as veinlets and disseminations in barite masses cutting grey dolomite. In some cases, the veinlets roughly parallel relict compositional banding (Plate XA). Galena also occurs as stockwork veinlets and fracture fillings in brecciated grey dolomites and brown ferrodolomites (Plate XB). White coatings of anglesite ($PbSO_4$) and cerrusite ($PbCO_3$) were noted in oxidized rubble at the overburden-bedrock interface in trenched areas.

Crosscutting calcite stringers are common features in all trenches. Barite occurs as massive crystalline veins and patches directly associated with the best sulphide mineralization.

Lefebure's petrographic work documents that sphalerite, although difficult to recognize in the field, occurs commonly as small rounded blebs in the galena. Acanthite (Ag_2S), the most common silver mineral, also occurs as inclusions in galena. By staining of representative specimens, he was able to indicate a direct correlation between the intensity of dolomitization in original limestone units and the presence of sulphides. His conclusion was that dolomitization preceded sulphide deposition in this area, since the galena-barite veins clearly crosscut dolomitized sections. This dolomitization resulted in increased porosity, as evidenced by vugs and open space textures, and therefore enhanced the environment for deposition.

Pyrite, locally a common accessory in all limy units, also occurs as small rounded grains within sulphide veins, or as large irregular masses associated with sphalerite.

Chip samples were taken as systematically as possible along the vertical bedrock face of trenches where visible mineralization was exposed. Other trenches within the linear mineralized zones indicated on Figure 32, although not sampled, contain similar sulphide-bearing sections. The samples were fractioned to correspond to variations in rock type and sulphide content.

Figure 32 indicates the areas sampled and the following table shows the assay results determined by atomic absorption techniques in the Department of Mines and Petroleum Resources analytical laboratory.

REFERENCES: Lefebure, D. V. (1974), The Beveley Property, A Lead-Silver Prospect in North-Central British Columbia, unpub. B.Sc. Thesis, *Queen's University*, 47 pp.; McCammon, J. W. (1952), Osilinka River - Nina Lake Area, *Minister of Mines, B.C.*, Ann. Rept., 1952, pp. 98-109; Roots, R. F. (1954), Geology and Mineral Deposits of Aiken Lake Map-Area, B.C., Beveley Group, *Geol. Surv., Canada*, Mem. 274, p. 228.

DAVE (94C-76) (Fig. E, No. 67)

LOCATION: Lat. 56° 07′ Long. 125° 23′ (94C/3W)
OMINECA M.D. Eight miles north-northwest of Uslika Lake and 26 miles north of Germansen Landing, at approximately 5,000 feet elevation.

CLAIMS: DAVE 1 to 18.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver V6C 1A5.

METAL: Copper.

DESCRIPTION: The claims extend across the contact zone between Takla Group volcanic rocks and the Hogem batholith, which here consists of fine-grained quartz monzonite intricately intruding medium-grained quartz monzonite. Both phases have been cut by fractures striking north 30 degrees west and north 40 degrees east. The northwest set is marked by limonite gossan zones 1 to 8-foot wide, which contain chalcopyrite and pyrite pods, quartz-specularite veins, and quartz-epidote veins carrying disseminated chalcopyrite.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet; geochemical survey, 14 line-miles, 340 soil samples taken at 100 and 200-foot intervals on lines 400 feet apart and 22 rock samples taken from gossan areas covering all claims.

REFERENCE: Assessment Report 4619.

OY (94C-71) (Fig. E, No. 66)

LOCATION: Lat. 56° 09′ Long. 125° 30′ (94C/3W)
OMINECA M.D. Forty-eight miles northwest of Germansen Landing, straddling Tenakihi Creek, between a series of small lakes, at approximately 6,000 feet elevation.

CLAIMS: OY 1 to 40, DUD 1 to 8.

OWNER: AMOCO CANADA PETROLEUM COMPANY LTD., Mining Division, 2160, 1055 West Hastings Street, Vancouver V6E 2E9.

METAL: Copper.

DESCRIPTION: In the area monzodiorite and diorite, which have been invaded by numerous dykes and apophyses of fine-grained quartz monzonite (plus monzonite), are in contact with Takla Group rocks. Chalcopyrite occurs as fracture coatings, coarse grains in quartz veins, and minor disseminations over the whole property. Mineralization includes chalcopyrite and specular hematite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; linecutting, 10 miles of grid in timbered parts of valley.

GAIL (94C-72) (Fig. E, No. 65)

LOCATION: Lat. 56° 10′ Long. 125° 32′ (94C/3W, 4E)
OMINECA M.D. Headwaters of Tenakihi Creek, approximately 41 miles northwest of Germansen Landing.

CLAIMS: GAIL 1 to 70, GAIL 4 to 21, 27, 28 Fractions.

(94C/4E)

OWNER: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The claims are underlain entirely by the Hogem batholith consisting here mainly of monzodiorite, but containing segregations of appinite and hornblende in discordant relationships. Pyrite, chalcopyrite, molybdenite, and bornite occur as blebs and smears in quartz veins and disseminated in the wallrock.

WORK DONE: Geochemical survey, 40 soil samples taken at 100 by 200-foot grid spacing and 30 composite rock samples taken from talus slopes above the cirque floor covering Gail 3, 5, 19-22 and Gail 6 and 13 Fractions; topographic mapping, 1 square mile.

REFERENCE: Assessment Report 4599.

GR (Fig. E, No. 64)

LOCATION: Lat. 56° 02′ Long. 125° 38′ (94C/4E)

OMINECA M.D. Forty miles northwest of Germansen Landing, 4 miles north of Haha Creek, at approximately 5,000 feet elevation.

CLAIMS: GR 1 to 8.

OWNER: PECHINEY DEVELOPMENT LIMITED, 701, 744 West Hastings Street, Vancouver V6C 1A5.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and geochemical soil survey, 215 samples taken at 200 by 400-foot grid spacing, 8 line-miles covering all claims.

REFERENCE: Assessment Report 4618.

HAWK (93N-171) (Fig. D, No. 93)

LOCATION: Lat. 56° 02′ Long. 125° 41′ (93N/13E; 94C/4E)

Report on this property in section 93N/13E.

GRANITE BASIN (94C-9) (Fig. E, No. 59)

LOCATION: Lat. 56° 29′ Long. 125° 52′ (94C/5W)

OMINECA M.D. Six miles northwest of Aiken Lake, between 4,000 and 6,000 feet elevation.

CLAIMS: SUSIE 1 to 20, 24, 25, SUSIE 21 to 23 Fractions.

OWNER: D. Stelling.

OPERATORS: D. STELLING, Bag 25, Fort St. James and UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby.

METALS: Gold, silver.

DESCRIPTION: Takla Group volcanic and sedimentary rocks have been cut by small diorite bodies and shear zones which are mineralized with pyrite, sphalerite, and tetrahedrite carrying gold and silver values.

(94C/5W)

WORK DONE: 1972 – geochemical soil survey, approximately 300 samples taken on 200 by 200-foot grid spacing covering Susie 1-5, 7, 9, 11 and Susie 21-23 Fractions; 1973 – continuous chip sampling of 65 feet of exposure on 156 feet of line across the pyritized zone.

REFERENCES: *Geol. Surv., Canada,* Mem. 274, p. 217; *B.C. Dept. of Mines,* Bull. 1, p. 15; Assessment Reports 4487, 4900.

SARAH (94C-75) (Fig. E, No. 60)

LOCATION: Lat. 56° 29′ Long. 125° 58′ (94C/5W)
OMINECA M.D. Eight miles northwest of Aiken Lake, between 5,000 and 7,000 feet.

CLAIMS: SARAH 1 to 50, CAROLINE 1 to 16, CAROLINE 17 Fraction.

OWNER: D. STELLING (Stellac Exploration Ltd.), Bag 25, Fort St. James.

METALS: Copper, gold, silver.

DESCRIPTION: The area is underlain by Takla Group andesite and basalt flows and by part of the Croydon Creek stock. The stock varies from hornblende to hornblende diorite and from fine grained to pegmatitic. It contains abundant inclusions of the volcanic rocks, and is successively injected by aplite and quartz-feldspar porphyry dykes. Pyrite, chalcopyrite, and malachite, with very minor bornite, coat fractures in the mafic intrusive and are disseminated in clots of hornblende and pyroxene. Veins of massive chalcopyrite as much as 1 foot wide occur in northeast-striking shear zones.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet and geochemical rock chip survey, 180 samples covering Sarah 1-26, 31-42, 45-50 during 1972 and 1973.

REFERENCES: *Geol. Surv., Canada,* Mem. 274, p. 165; Assessment Report 4565.

BURN (94C-56) (Fig. E, No. 63)

LOCATION: Lat. 56° 27′ Long. 125° 28′ (94C/5E, 6W)
OMINECA M.D. Ten miles east-northeast of Aiken Lake, between 4,500 and 5,000 feet elevation.

CLAIMS: BURN 1 to 20.

OWNER: S.E.R.E.M. LTD. (BERGMINEX ASSOCIATES), 505, 850 West Hastings Street, Vancouver V6C 1E1.

METALS: Lead, zinc, (silver, barite).

DESCRIPTION: Lenses of massive white limestone with bedded grey fine dolomite are overlain by grey-black slates and underlain by green argillites and grit (Ingenika Group, Upper Proterozoic). Silicified horizon caps the carbonate unit. Mineralization consists of sparse disseminated fine galena and minor light sphalerite in coarse white-cream dolomite zones crosscutting white limestone, near the contact with grey-black slates. Some cerussite was noted. Bedded lenses of barite in grey dolomite occur near sheared black graphitic slates.

(94C/6W)

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; horizontal shootback EM survey, 13.8 line-miles; geochemical soil survey, 608 samples taken at 200 by 400-foot grid spacing; linecutting, 21 miles of grid covering all claims; trenching, 82 cubic yards on Burn 8.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 477; Assessment Reports 4605, 4608.

SWAN (94C-73) (Fig. E, No. 62)

LOCATION: Lat. 56° 25' Long. 125° 27' (94C/6W)
OMINECA M.D. Ten miles east of Aiken Lake, between 4,000 and 4,300 feet elevation.

CLAIMS: SWAN 1 to 6.

OWNER: S.E.R.E.M. LTD. (BERGMINEX ASSOCIATES), 505, 850 West Hastings Street, Vancouver V6C 1E1.

METALS: Lead, zinc, (silver).

DESCRIPTION: Lenses of massive white limestone with bedded grey fine dolomite are overlain by grey-black slates and underlain by green argillites and grit (Ingenika Group, Upper Proterozoic). A silicified horizon caps the carbonate unit. Sparse disseminated fine galena and minor light sphalerite occur in coarse white-cream dolomitic zones crosscutting white limestone, near the contact with grey-black slates. Some cerussite is present.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; horizontal shootback EM survey, 5.9 line-miles; geochemical soil survey, 230 samples taken at 50 and 200-foot intervals on grid lines spaced 400 feet; linecutting, 5 miles of grid covering all claims; trenching, 97 cubic yards on Swan 1 and 5.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 478; Assessment Reports 4654, 4655.

RAIN (94C-74) (Fig. E, No. 61)

LOCATION: Lat. 56° 30' Long. 125° 35' (94C/12E, 5E)
OMINECA M.D. Eight miles northeast of Aiken Lake, between 5,500 and 6,500 feet elevation.

CLAIMS: RAIN 1 to 20.

OWNER: S.E.R.E.M. LTD. (BERGMINEX ASSOCIATES), 505, 850 West Hastings Street, Vancouver V6C 1E1.

METALS: Lead, zinc, (silver, barite).

DESCRIPTION: The claims are underlain by members of the Upper Proterozoic Ingenika Group comprising lenses of dark grey dolomitized limestones interbedded with brown argillites and green grits. These lenses are overlain by grey slates and underlain by chlorite schists and impure quartzites. Disseminated galena, honey sphalerite, and minor pyrite occur in a stockwork of ankerite, calcite, barite, and minor quartz within dolomitic zones crosscutting grey limestone.

(94C/16E)

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; horizontal shootback EM survey, 10.6 line-miles; geochemical soil survey, 182 samples taken at 200 by 400-foot grid spacing covering Rain 1-10; geochemical soil survey, 46 samples taken at 100 by 400-foot grid spacing on Rain 7 and 9 and 184 samples taken at 200 by 800-foot grid spacing on Rain 11-20; linecutting covering Rain 1-20.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 478; Assessment Reports 4606, 4607.

PIKA (94C-70) (Fig. E, No. 5)

LOCATION: Lat. 56° 58′ Long. 124° 02.5′ (94C/16E)
LIARD M.D. One hundred and thirty miles west-northwest of Fort St. John, 15 miles due north of Trident Peak.

CLAIMS: PIKA 1 to 10, RL 7 and 8, MAC 1 to 4.

OWNER: BUCKHORN MINES LTD., 1000, 1055 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Generally, rocks on the property consist of chlorite and sericite schists, probably of the Precambrian Misinchinka Group. Known copper mineralization occurs within the survey area.

WORK DONE: 1972 – geochemical soil survey, 132 samples taken at 50 by 200-foot grid spacing on Pika 5 and 6 and analysed for copper.

REFERENCE: Assessment Report 4197.

McCONNELL CREEK 94D

FIRE (KAZA) (93M-111) (Fig. D, No. 77)

LOCATION: Lat. 56° 00′ Long. 126° 20′ (93M/16W; 94D/1W)
Report on this property in section 93M/16W.

FRED, BOBO, MARG (94D-32, 35) (Fig. E, No. 22)

LOCATION: Lat. 56° 03′ Long. 126° 16′ (94D/1W)
OMINECA M.D. One mile north of Kaza Lake which is 25 miles north of Takla Lake, at approximately 5,000 feet elevation.

CLAIMS: FRED, BOBO, MARG, MONA, etc., totalling approximately 89.

OWNER: Northstar Copper Mines Ltd.

OPERATOR: BETHLEHEM CCPPER CORPORATION LTD., 2100, 1055 West Hastings Street, Vancouver.

METALS: Copper, silver.

DESCRIPTION: Chalcocite, digenite, and bornite with minor chalcopyrite and native copper occur in andesite porphyry and shales.

WORK DONE: Surface geological mapping; geochemical survey; surface diamond drilling, eight holes totalling approximately 1,000 feet; road construction, approximately 2 miles.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 478.

ARP (94D-66) (Fig. E, No. 21)

LOCATION: Lat. 56° 13′ Long. 126° 16′ (94D/1W)
OMINECA M.D. Approximately 4 miles east-southeast of Mount Carruthers, Sikanni Range, between 5,500 and 5,700 feet elevation.

CLAIMS: ARP 1 to 10.

OWNER: S.E.R.E.M. LTD. (BERGMINEX ASSOCIATES), 508, 850 West Hastings Street, Vancouver V6C 1E1.

METAL: Copper.

DESCRIPTION: Rocks exposed on the property consist of a green Early Mesozoic volcaniclastic sequence of andesite and basalt pyroclastic beds, siltstones, and cherts. This is overlain by a reddish assemblage of andesite and dacite breccias, argillites, and conglomerate lenses. Mineralization consists of disseminated chalcocite in thinly bedded andesitic tuffs and in finely grained dacite. Quartz-epidote veins contain disseminated chalcopyrite and bornite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet and geochemical soil survey, 186 samples taken on a 200 by 800-foot grid spacing; linecutting covering ARP 1-10; trenching, 60 feet on ARP 4 and 6.

BEAR (94D-68) (Fig. E, No. 24)

LOCATION: Lat. 56° 07′ Long. 126° 52′ (94D/2W)
OMINECA M.D. On the Tsaytut Spur between Bear Lake and the headwaters of the Driftwood River, at approximately 5,500 feet elevation.

CLAIMS: BEAR 3 to 18, 25 to 36, 41 to 72, 77 to 108, 110 to 135.

OWNER: CANADIAN NICKEL COMPANY LIMITED, Copper Cliff, Ontario.

METALS: Copper, molybdenum.

DESCRIPTION: Takla Group volcanic rocks have been successively intruded by diorite and quartz monzonite porphyry of the Kastberg intrusions. The diorite is moderately to intensely fractured and injected by quartz stockworks and aplite dykes. Pyrite, chalcopyrite, and molybdenite occur in these stockworks adjacent to the porphyry, and to a lesser extent in stockworks and fractures in the porphyry. Pyrite and chalcopyrite are also sparsely disseminated through the porphyry.

WORK DONE: Topographic mapping of 4.5 square miles; surface geological mapping, 1 inch equals 200 feet covering Bear 3-10, 25-28, 41-46, 56, 61-67; frequency-domain IP survey, 4.5 line-miles; magnetometer survey, 8.5 line-miles; geochemical survey, 397 bedrock samples taken at varying intervals; linecutting, 8.5 miles of grid covering same claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 479; Assessment Report 4648.

PAC, CAN (94D-67) (Fig. E, No. 23)

LOCATION: Lat. 56° 03′ Long. 127° 00′ (94D/2W, 3E)
OMINECA M.D. Driftwood Valley, approximately 100 miles north of Smithers, 2 miles east of Motase Lake, between 4,000 and 5,000 feet elevation.

(94D/3E)

CLAIMS: PAC 1 to 26, CAN 1 to 28.

OWNER: KEYWEST RESOURCES LTD., 818, 510 West Hastings Street, Vancouver.

METALS: Copper, gold, silver.

DESCRIPTION: The area is underlain mainly by Takla Group andesite lavas, tuffs, and agglomerate. Banded hornfels dip west beneath the volcanic rocks on Pac 20 and Can 7 to 10. An elongate stock of porphyry granodiorite, of the Kastberg intrusions, has intruded the volcanic rocks and an apophysis of diorite cuts across the hornfels. In several places the volcanic rocks are mineralized with pyrite, pyrrhotite, and minor chalcopyrite. Two narrow quartz veins in the granodiorite carry chalcopyrite and bornite. The hornfels contains sulphides along the banding and carries modest amounts of copper mineralization.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Pac 1, 2, 13, 14, 16 to 18, 20 and Can 5-8; magnetometer survey, approximately 10 line-miles covering Can 5-8 and 21; geochemical soil survey, 450 samples taken at 100 by 500-foot grid spacing covering Can 5-8, 21 and Pac 18, 20; linecutting, 10 miles of grid; trenching, 50 by 10 by 3 feet on Pac 18 and 20.

REFERENCE: Assessment Report 4686.

RIM (94D-72) (Fig. E, No. 33)

LOCATION: Lat. 56° 04′ Long. 127° 05′ (94D/3E)
OMINECA M.D. Two miles northwest of Motase Lake, at approximately 6,000 feet elevation.

CLAIMS: RIM 1 to 30.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Chalcopyrite and molybdenite mineralization is associated with feldspar porphyry dykes near diorite-sedimentary rock contacts.

WORK DONE: Surface geological mapping, 1 inch equals one-half mile covering all claims.

HORN (94D-69) (Fig. E, No. 25)

LOCATION: Lat. 56° 07′ Long. 127° 04′ (94D/3E)
OMINECA M.D. Four miles north-northwest from Motase Lake, at approximately 4,500 feet elevation.

CLAIMS: HORN 1 to 48.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Molybdenum, copper.

DESCRIPTION: Siltstone units which have been intruded by quartz diorite porphyry dykes have been altered to hornfels, tightly folded, and shattered. Pyrite and less pyrrhotite are widely distributed through the claim area, and minor chalcopyrite and molybdenite occur in the hornfels.

WORK DONE: Surface geological mapping, 1 inch equals 800 feet; geochemical survey, 284 soil samples taken at 200 by 800-foot grid spacing plus 25 silt and 20 rock chip samples covering all claims.

REFERENCE: Assessment Report 4731.

SUN (94D-70) (Fig. E, No. 31)

LOCATION: Lat. 56° 11' Long. 127° 11' (94D/3E)
OMINECA M.D. Ten miles north-northwest from Motase Lake, at approximately 5,500 feet elevation.

CLAIMS: SUN 1 to 40.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Sedimentary rocks of the Skeena Formation have been intruded by feldspar porphyry plug and dykes. Molybdenite and chalcopyrite mineralization has been observed in hornfels zones.

WORK DONE: Surface geological mapping, 1 inch equals one-half mile covering all claims.

PAT (94D-71) (Fig. E, No. 32)

LOCATION: Lat. 56° 12' Long. 127° 05' (94D/3E)
OMINECA M.D. Between Mount Patsha and Squingula River, 10 miles north of Motase Lake, between 3,500 and 4,000 feet elevation.

CLAIMS: PAT 1 to 72.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Copper, silver.

DESCRIPTION: Copper mineralization, including chalcopyrite, bornite, and chalcocite, occurs as disseminations in rhyolite flows and as veinlets in Lower Jurassic pyroclastic rocks.

WORK DONE: Surface geological mapping, 1 inch equals 800 feet and geochemical soil and silt survey, approximately 20 line-miles covering all claims.

QUIN (94D-73) (Fig. E, No. 34)

LOCATION: Lat. 56° 13' Long. 127° 13' (94D/3E)
OMINECA M.D. Thirteen miles north-northwest from Motase Lake, on the west side of Squingula River, at approximately 5,500 feet elevation.

CLAIMS: QUIN 1 to 36.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Sedimentary rocks of the Cretaceous Skeena Formation have been intruded by a small circular granitic plug. Chalcopyrite and molybdenite have been observed in the hornfels zone.

(94D/3E)

WORK DONE: Surface geological mapping, 1 inch equals one-half mile covering all claims.

CRAMP, MAGNUM (94D-58) (Fig. E, No. 29)

LOCATION: Lat. 56° 14' Long. 127° 04' (94D/3E)
OMINECA M.D. Three miles north of Mount Patcha, at approximately 5,500 feet elevation.

CLAIMS: CRAMP 1 to 4.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION: Disseminated chalcocite, bornite, and chalcopyrite occur as irregular lenses in well-bedded Hazelton Group agglomerates and tuffs. Diorite intrusions are reported to occur nearby.

WORK DONE: Surface diamond drilling, one hole totalling 60 feet on Cramp 4.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 186.

RED (Fig. E, No. 27)

LOCATION: Lat. 56° 14' Long. 127° 10' (94D/3E)
OMINECA M.D. Adjacent to the Squingula River to the northeast, 14 miles west of Bear Lake, at approximately 3,700 feet elevation.

CLAIMS: RED 1 to 53, 58 to 342.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Copper, silver.

DESCRIPTION: The claims are underlain mainly by flow lava and volcaniclastic rocks. These contain a lens of reefoid limestone mineralized with copper. East of this lens the rocks are intruded by a gabbro sill and small microdiorite stock.

WORK DONE: Topographic mapping, 1 inch equals 400 feet covering 14.6 square miles; surface geological mapping, 1 inch equals 400 feet covering Red 1-53 and 58-243 and 1 inch equals 100 feet covering Red 1-8, 14, and 16; ground magnetometer survey, 75 line-miles covering Red 1-53, 59, 61-95, 116-123, 125, 127, 129, 131, 133, 135, 137, 143, 145-155, 157-198, 200-210, 212-229, 232-240; geochemical soil survey, 1,997 samples taken at nominal 200 by 800-foot grid spacing covering same claims as magnetometer survey; surface diamond drilling, nine holes totalling 2,972 feet on Red 3 and 5; diamond-drill holes, roads, and trenches surveyed, 1 inch to 100 feet; road construction, 5 miles on Red 3-8, 39-42, 70-73, 79-82; trenching, 1,800 feet on Red 5, 6, 7, and 86; stripping, 400 by 250 feet on Red 5 and 6; linecutting, approximately 75 miles of grid.

REFERENCE: Assessment Report 4562.

OUT (Fig. E, No. 30)

LOCATION: Lat. 56° 15′ Long. 127° 06′ (94D/3E)
OMINECA M.D. One hundred and two air miles due north of Smithers, between 5,000 and 5,500 feet elevation.

CLAIMS: OUT 1 to 10.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Copper, silver, barite.

DESCRIPTION: Intercalated basic to intermediate volcanic flows and tuffs have been cut by a major east-west steep to vertical fault. Mineralization which includes chalcocite, bornite, and chalcopyrite is associated with intersections of this fault with tuffaceous horizons.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet covering all claims.

IN, CON, MOTASE A (94D-61) (Fig. E, No. 26)

LOCATION: Lat. 56° 13′ Long. 127° 18′ (94D/3, 6)
OMINECA M.D. Twenty miles northwest of Bear Lake, on Jake Creek, near the confluence of the Skeena and Squingula Rivers, at approximately 3,000 feet elevation.

CLAIMS: IN 1 to 80, CON 1 to 99.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Copper, lead, zinc, silver.

DESCRIPTION: The property is underlain by sedimentary and volcanic rocks of the Hazelton Group which have been intruded by Tertiary intrusive rocks. Minor chalcopyrite and/or galena and sphalerite occur as micro-veinlets within both the country rocks and the Tertiary intrusive rocks.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 74.5 line-miles; and geochemical soil survey, 1,968 samples taken at nominal 200 by 800-foot grid spacing covering all claims; surface diamond drilling, seven holes totalling 2,955 feet on In 4 and 6; topographic mapping, 1 inch equals 400 feet covering 13.8 square miles; transit survey of roads and diamond-drill hole locations, 1 inch equals 100 feet; road construction, from Squingula River to centre of property; trenching, 5,500 feet on In 61, 62, 64 and Con 28, 30.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1966, p. 81; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 479; Assessment Report 4563.

MP (Fig. E, No. 28)

LOCATION: Lat. 56° 05′ Long. 127° 13′ (94D/3E)
OMINECA M.D. On the western slope of Motase Peak, at approximately 3,500 feet elevation.

CLAIMS: MP 1 to 42.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

(94D/3W)

METALS: Copper, molybdenum.

DESCRIPTION: Disseminated chalcopyrite occurs in fault bounded metavolcanic rocks within the Bowser Basin. Minor molybdenite is associated with pyritic acid dykes and sills cutting the sedimentary country rocks.

WORK DONE: Surface geological mapping, 1 inch equals one-half mile covering all claims.

SR (Fig. E, No. 6)

LOCATION: Lat. 56° 14′ Long. 127° 22′ (94D/3W)
OMINECA M.D. Approximately 20 miles northwest of Bear Lake, straddling the Squingula River, at approximately 2,250 feet elevation.

CLAIMS: SR 1 to 40.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

DESCRIPTION: The claims are underlain by sedimentary rocks which have been intruded by Tertiary dykes. Overburden is extensive.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering SR 1-8, 24, 25; topographic mapping, 1 inch equals 400 feet; transit survey of road, 1 inch equals 400 feet; road construction, 4 miles on SR 6, 10-22, 23-25, 27, and 29.

TIE (94D-89) (Fig. E, No. 96)

LOCATION: Lat. 56° 27′ Long. 126° 41′ (94D/7E)
OMINECA M.D. Ten miles southwest of Sustut Peak, between 4,000 and 5,000 feet elevation.

CLAIMS: TIE 1 to 48, JAN 85 to 112.

OWNER: BESTOR EXPLORATIONS LTD., 1502, 11111 – 87th Avenue, Edmonton, Alta.

METAL: Copper.

DESCRIPTION: The area is underlain mainly by tuffs with intercalated andesite and basalt flows, thin layers of banded chert and tuffaceous argillite, and a lens of volcanic conglomerate. These rocks are locally propylitized and intruded by a dyke of hornblende-feldspar porphyry. They have been folded into an arcuate syncline and anticline, and disrupted by block faulting. Chalcopyrite, pyrite, and malachite are disseminated in tuffs near faults, and chalcopyrite, chrysocolla, bornite, and pyrite are disseminated in the porphyry dyke adjacent to a shear zone.

WORK DONE: Surface geological mapping, 1 inch equals 1,320 feet; geochemical survey, 200 silt and 20 soil samples taken at varying intervals and 5 rock samples taken for copper assay covering most of Tie 2-48 and Jan 88-112.

REFERENCES: Assessment Reports 4892 (4853, 4854, 4855).

PAT (94D-74) (Fig. E, No. 45)

LOCATION: Lat. 56° 28′ Long. 126° 42′ (94D/7E)
OMINECA M.D. Three miles east of the junction of Red Creek and the Sustut River, at approximately 5,900 feet elevation.

CLAIMS: PAT 1 to 8.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: Siltstone and tuffaceous wacke units have been intruded by a diorite pluton. Sphalerite and chalcopyrite have been localized in calcite veins.

WORK DONE: Geochemical soil survey, 242 samples taken at 100-foot intervals along traverses 200 to 400 feet apart covering all claims.

REFERENCE: Assessment Report 4784.

PLUTO (Fig. E, No. 44)

LOCATION: Lat. 56° 29′ Long. 126° 37′ (94D/7E)
OMINECA M.D. On the northeast slope of a ridge about 3 miles south of Willow Creek and 4 miles east of the Sustut River, at approximately 5,500 feet elevation.

CLAIMS: PLUTO 1 to 6.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION: Underlain mainly by Takla Group andesite tuff and coarse agglomerate. Transecting shear zones contain disseminated chalcocite, bornite, and chalcopyrite and rarely lenses of massive sulphides.

WORK DONE: Geochemical survey, 97 samples of talus fines taken on random traverses.

REFERENCE: Assessment Report 4564.

A (94D-16, 38) (Fig. E, No. 46)

LOCATION: Lat. 56° 27′ Long. 126° 35′ (94D/7E, 10E)
OMINECA M.D. Ten miles southwest of Sustut Lake.

CLAIMS: A 1 to 700, A 798, 799, and 800 Fractions.

OWNER: RIO TINTO CANADIAN EXPLORATION LIMITED, Box 49108, Vancouver V7X 1G4.

METAL: Copper.

DESCRIPTION: Pyroclastic volcanic rocks of the Takla Group underlie the area. Mineralization consists of malachite, bornite, native copper, and chalcocite with quartz and/or calcite in shear zones. One minor showing (94D-16) of sphalerite and galena in calcite and quartz veins was noted.

WORK DONE: Reconnaissance surface geological mapping, 1 inch equals one-half mile; airborne magnetometer and EM survey, 36 line-miles covering 38 A claims; geochemical survey, 2,498 soil and silt samples taken, the soil samples being taken at 200-foot intervals along the 500-foot contours; geological interpretation of 450 square miles from aerial photographs.

REFERENCES: Assessment Reports 4564, 4853, 4854, 4855.

DAY (94D-65) (Fig. E, No. 47)

LOCATION:	Lat. 56° 30′ Long. 126° 47′ (94D/7E, 10E) OMINECA M.D. At the headwaters of a west tributary of the Sustut River, 3 miles north of the junction of Sustut River and Red Cree, at approximately 4,500 feet elevation.
CLAIMS:	DAY 1 to 22, 40, 42, 44, 46, 48, 50, FIR 1 to 12.
OWNER:	WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver.
METALS:	Copper, gold.
DESCRIPTION:	An altered quartz diorite plug intrudes acidic volcanic rocks of the Upper Takla Group. Disseminated and vein-like mineralization occurs in both the intrusive (including a porphyry phase) and the volcanic rocks. Mineralization includes chalcopyrite, bornite, and quartz and minor pyrite, hematite, and molybdenite.
WORK DONE:	Surface diamond drilling, one hole totalling 784 feet on Day 3 and 4.
REFERENCE:	*B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 479.

TOM, ROY, BETH (Fig. E, No. 110)

LOCATION:	Lat. 56° 15′ Long. 126° 22′ (94D/8W) OMINECA M.D. East of Mount Carruthers, in the Sikanni Range, at approximately 6,000 feet elevation.
CLAIMS:	TOM 1 to 10, ROY 1 to 8, BETH 1 to 16.
OWNER:	NORTHSTAR COPPER MINES LTD., 1214 Eastview Road, North Vancouver.
METAL:	Copper.
WORK DONE:	Slashing and blasting.

PAD (94D-75) (Fig. E, No. 42)

LOCATION:	Lat. 56° 16′ Long. 126° 18′ (94D/8W) OMINECA M.D. One and one-half miles east of Mount Carruthers, Sikanni Range, between 5,600 and 6,000 feet elevation.
CLAIMS:	PAD 1 to 12.
OWNER:	S.E.R.E.M. LTD. (BERGMINEX ASSOCIATES), 505, 850 West Hastings Street, Vancouver V6C 1E1.
METAL:	Copper.
DESCRIPTION:	The area is underlain by an Early Mesozoic sequence of pyroclastic, volcanic-derived sedimentary rocks. Mineralization consists of disseminated chalcocite in andesitic tuffs and in dacite.
WORK DONE:	Surface geological mapping, 1 inch equals 400 feet; geochemical soil survey, 139 samples taken on a 200 by 800-foot grid spacing; linecutting covering all claims.

LIZ (94D-76) (Fig. E, No. 41)

LOCATION: Lat. 56° 18' Long. 126° 24' (94D/8W)
OMINECA M.D. Sikanni Range, 3.4 miles northwest of Mount Carruthers, at approximately 4,700 feet elevation.

CLAIMS: LIZ 1 to 8.

OWNER: S.E.R.E.M. LTD. (BERGMINEX ASSOCIATES), 505, 850 West Hastings Street, Vancouver V6C 1E1.

METAL: Copper.

DESCRIPTION: The area is underlain by a lower green and an upper red volcaniclastic Mesozoic sequence. Fractures contain veinlets of calcite, chalcocite, bornite, rare chalcopyrite, and some disseminated chalcocite in purplish red tuffs.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical soil survey, 106 samples; linecutting covering all claims.

RINGO (Fig. E, No. 43)

LOCATION: Lat. 56° 25' Long. 126° 06' (94D/8E)
OMINECA M.D. Fifteen miles southeast of Sustut Peak, at the head of Dortatelle Creek, between 5,000 and 7,000 feet elevation.

CLAIMS: RINGO 1 to 22, RINGO 23 and 24 Fractions, NORLEN 7 to 12, NORLEN 13 and 14 Fractions, TUMBLE 3 and 4.

OWNERS: D. STELLING and STELLAC EXPLORATION LTD., Bag 25, Fort St. James.

METALS: Molybdenum, copper.

DESCRIPTION: Quartz veins with molybdenite and minor chalcopyrite have been observed in felsite and pegmatite dykes near the contact of Takla volcanic rocks and the Hogem batholith.

WORK DONE: Geochemical soil survey, 290 samples taken at 200 by 200-foot grid spacing and analysed colorimetrically for molybdenum.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 480; Assessment Reports 3839, 4092, 4582.

KLI (94D-23) (Fig. E, No. 52)

LOCATION: Lat. 56° 30' Long. 126° 08' (94D/9E, 8E)
OMINECA M.D. Saddle between Kliyul and Lay Creeks, at approximately 5,700 feet elevation.

CLAIMS: KLI 1 to 21, 25 to 28, 39 to 50.

OWNER: Kennco Explorations, (Western) Limited.

OPERATOR: SUMAC MINES LTD., 1022, 510 West Hastings Street, Vancouver.

METALS: Copper, gold.

DESCRIPTION: Magnetite-pyrite-chalcopyrite mineralization consists of disseminated altered andesites.

WORK DONE: Surface diamond drilling, three holes totalling 216 feet.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 62.

ASITKA (94D-87) (Fig. E, No. 39)

LOCATION: Lat. 56° 37' Long. 126° 26' (94D/9W)
OMINECA M.D. Asitka Peak area, 10 miles west of Johanson Lake airfield.

CLAIMS: ASITKA 1 to 54, ASITKA 1 to 7 Fractions, BOB 1 to 6.

OWNER: NOMAD MINES LTD., 502, 470 Granville Street, Vancouver.

METAL: Copper.

DESCRIPTION: Porphyritic andesite flows, pyroclastic rocks, and minor intercalated sedimentary rocks belonging to the Takla Group have been intruded by a stock, one of the Omineca intrusions. The stock contains considerable pyrite and is covered by gossan; chalcopyrite is inconspicuously present scattered through parts of the gossan forming small veinlets and fracture coatings. Veins of quartz and chalcedony have been injected into the volcanic rocks; the wallrocks contain some chalcocite, chalcopyrite, bornite, malachite, and azurite.

WORK DONE: Linecutting, 27 miles of grid; surface geological mapping, 1 inch equals 500 feet covering 3 square miles; geochemical soil survey, 479 samples taken at 200 by 500-foot grid spacing; magnetometer survey, 3 line-miles covering Asitka 1-39, Asitka 1-7 Fractions, and Bob 1-6.

REFERENCES: Assessment Reports 4603, 4753.

Z (94D-4, 37) (Fig. E, No. 54)

LOCATION: Lat. 56° 40' Long. 126° 26' (94D/9W)
OMINECA M.D. Five miles northeast of the Sustut Creek junction with Johanson River.

CLAIMS: Z 1 to 60.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Copper, silver.

DESCRIPTION: Upper Triassic pyroclastic rocks and flows are overlain by Jurassic pyroclastic rocks and form a gently westward dipping sequence which has been intruded by two small plugs at the north and south parts of the property. Chalcocite, bornite, and chalcopyrite occur as veinlets, in shear zones, and locally disseminated in flow tops.

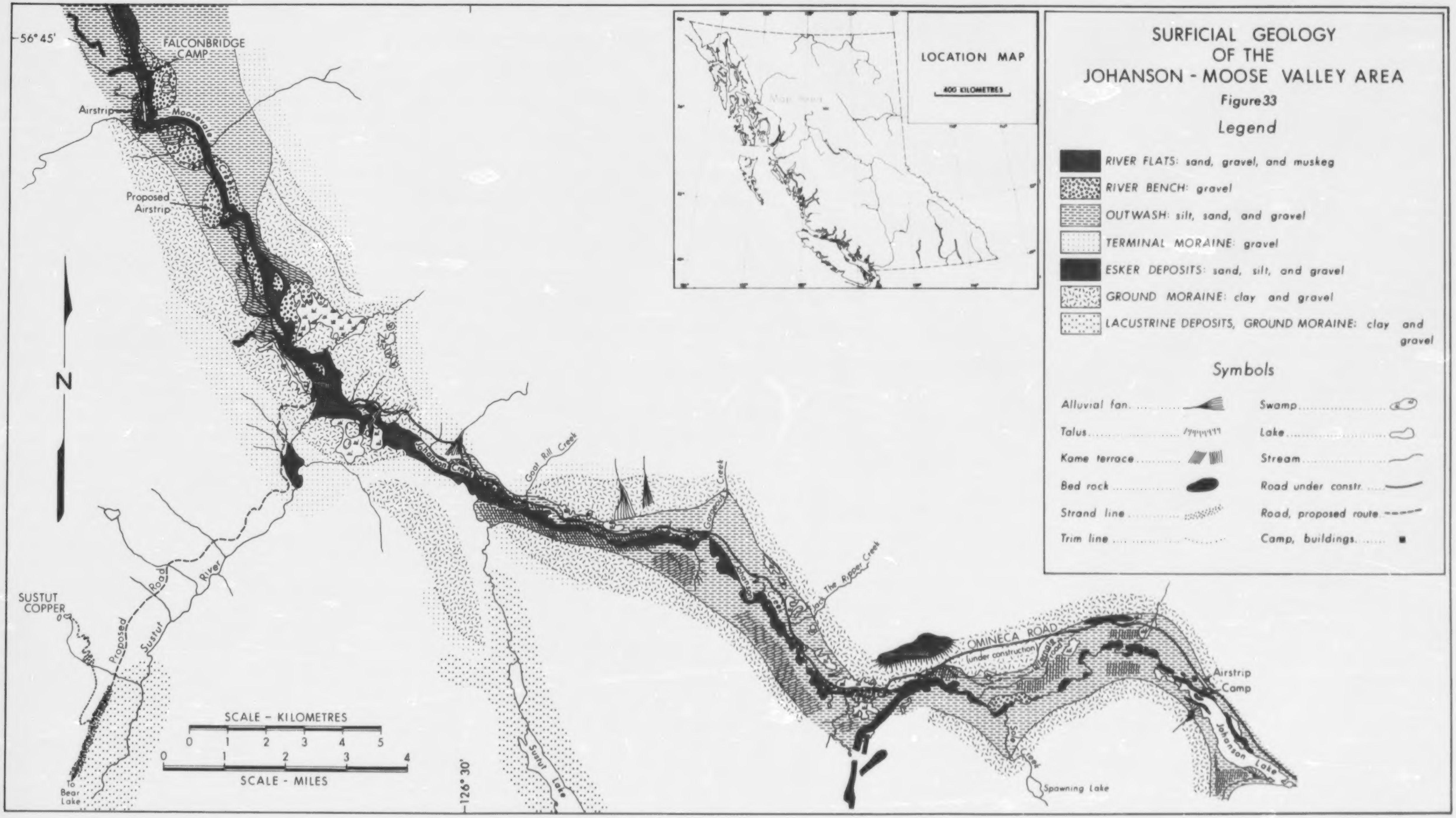
WORK DONE: Surface geological mapping, 1 inch equals 800 feet; reconnaissance geochemical survey, 80 soil samples and 40 silt samples, 4 line-miles covering all claims.

REFERENCE: Assessment Report 4593.

ASITKA (SIT GROUP) (94D-82) (Fig. E, No. 40)

LOCATION: Lat. 56° 32' Long. 126° 29' (94D/9W)
OMINECA M.D. Between elevations of 5,000 and 6,250 feet on the south slope of a ridge 2.5 miles southwest of Sustut Lake and 4 miles north of Willow Creek.

CLAIMS: ASITKA 1 to 196.



SURFICIAL GEOLOGY OF THE JOHANSON - MOOSE VALLEY AREA

Figure 33

Legend
RIVER FLATS: sand, gravel, and muskeg
RIVER BENCH: gravel
OUTWASH: silt, sand, and gravel
TERMINAL MORAINE: gravel
ESKER DEPOSITS: sand, silt, and gravel
GROUND MORAINE: clay and gravel
LACUSTRINE DEPOSITS, GROUND MORAINE: clay and gravel
Symbols
Alluvial fan
Talus
Kame terrace
Bed rock
Strand line
Trim line
Swamp
Lake
Stream
Road under constr.
Road, proposed route
Camp, buildings
LOCATION MAP
400 KILOMETRES
Map Area
56° 45'
126° 30'
N
FALCONBRIDGE CAMP
Airstrip
Mooseva Creek
Proposed Airstrip
Johanson Creek
Goat Rill Creek
Creek
Jack The Ripper Creek
OMINECA ROAD
(under construction)
Airstrip
Camp
Johanson Lake
Spawning Lake
Sustut Lake
Sustut River
Proposed Road
SUSTUT COPPER
To Bear Lake
SCALE - KILOMETRES
0
1
2
3
4
5
SCALE - MILES
0
1
2
3
4

(94D/9W, 16W)

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver.

METAL: Copper.

DESCRIPTION: Chalcopyrite, bornite, and chalcocite are present in fractures and amygdules in aphanitic red and green basalt lava flows. These rocks are overlain by Upper Triassic brown shales and a volcaniclastic unit. Some scattered copper mineralization was also observed in the shales.

WORK DONE: Geochemical soil survey, 287 samples taken at 50 by 100-foot and 100 by 200-foot grid spacing; 3 line-miles of grid and magnetometer and VLF EM survey covering Asitka 77, 125-128, 178, 180.

REFERENCE: Assessment Report 4786.

ARD (94D-90) (Fig. E, No. 98)

LOCATION: Lat. 56° 45' Long. 126° 28' (94D/9W, 16W)
OMINECA M.D. In Menard Creek valley, approximately 12 miles north of Sustut Lake.

CLAIMS: ARD 1 to 42, ARD 1 Fraction.

OWNER: DENISON MINES LIMITED, 1705, 777 Hornby Street, Vancouver.

METAL: Copper.

DESCRIPTION: Lower Takla andesite flows are serpentinized adjacent to a north-striking fault. This altered rock is intruded by gabbro at the north edge of the claim area and toward the south edge. Dykes of porphyritic granodiorite intrude fresh and altered andesite near and west of the fault; they are chloritized near the fault. Some of the dykes have sheared contacts mineralized with pyrite and minor chalcopyrite.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet; magnetometer survey, 13 line-miles; geochemical soil survey, 281 samples taken at 200 by 750-foot grid spacing covering all claims.

REFERENCE: Assessment Report 4707.

GEOLOGY OF THE SUSTUT AREA

By B. N. Church

An intensive geological investigation of the Mesozoic volcanic formations has been initiated following recent important copper discoveries in the Sustut district of north central British Columbia. The study covers areas in the vicinity of Sustut Peak and the terrain bordering the headwaters of the Sustut River.

To assist this project the Map Production Division of the British Columbia Department of Lands, Forests, and Water Resources has issued a series of detailed topographic maps on the scale of 1 inch to 1,320 feet. These largely complete the NTS 7½-degree quadrangles 94D 7f and g, 8e, 9d, 10a to g, and 16c covering approximately 500 square miles between latitudes 56 degrees 25 minutes to 52 minutes and longitudes 126 degrees 22.5 minutes to 27 minutes. Also, during the summer of 1973 the Department of Mines and Petroleum Resources has extended the right-of-way for the Omineca Road 20 miles beyond Johanson Lake to Falconbridge Nickel Mines Limited's (Wesfrob Mines Limited) Moose Valley campsite.

The geological survey of the area began with a study of a cross-section of the Swannell Ranges from McConnell Creek to Red Creek, paralleling, in part, the Sustut River. The detailed geological work has focused on the important mineral prospects in the area, including Falconbridge's Sustut Copper, Day, and Willow properties.

PHYSIOGRAPHY: The fabric of the terrain trends northwesterly parallel to both the regional strike of the strata and the main faults. The strongest amplitudes of this mountainous corregation are found in the belt of high aretes, horns, and spurs of massive Triassic basalt forming Mount Savage and Sustut Peak, the elevation of 8,100 feet being the highest point in the area. These jagged mountains overlook smoother ridges immediately to the northeast underlain by Paleozoic formations and beyond to Moose Valley floored by Tertiary and Pleistocene deposits. Southwest of Mount Savage and Sustut Peak the mountains are again relatively subdued, many being composed of well-layered volcanic rocks. In some cases the uppermost layers have been removed by erosion creating butte and cuesta-like surfaces.

East of Moose Valley the McConnell Range attains elevations in excess of 7,000 feet. Many of the ridges here are cored with granitic plutons and consequently tend to be more rounded in profile than the ranges to the west.

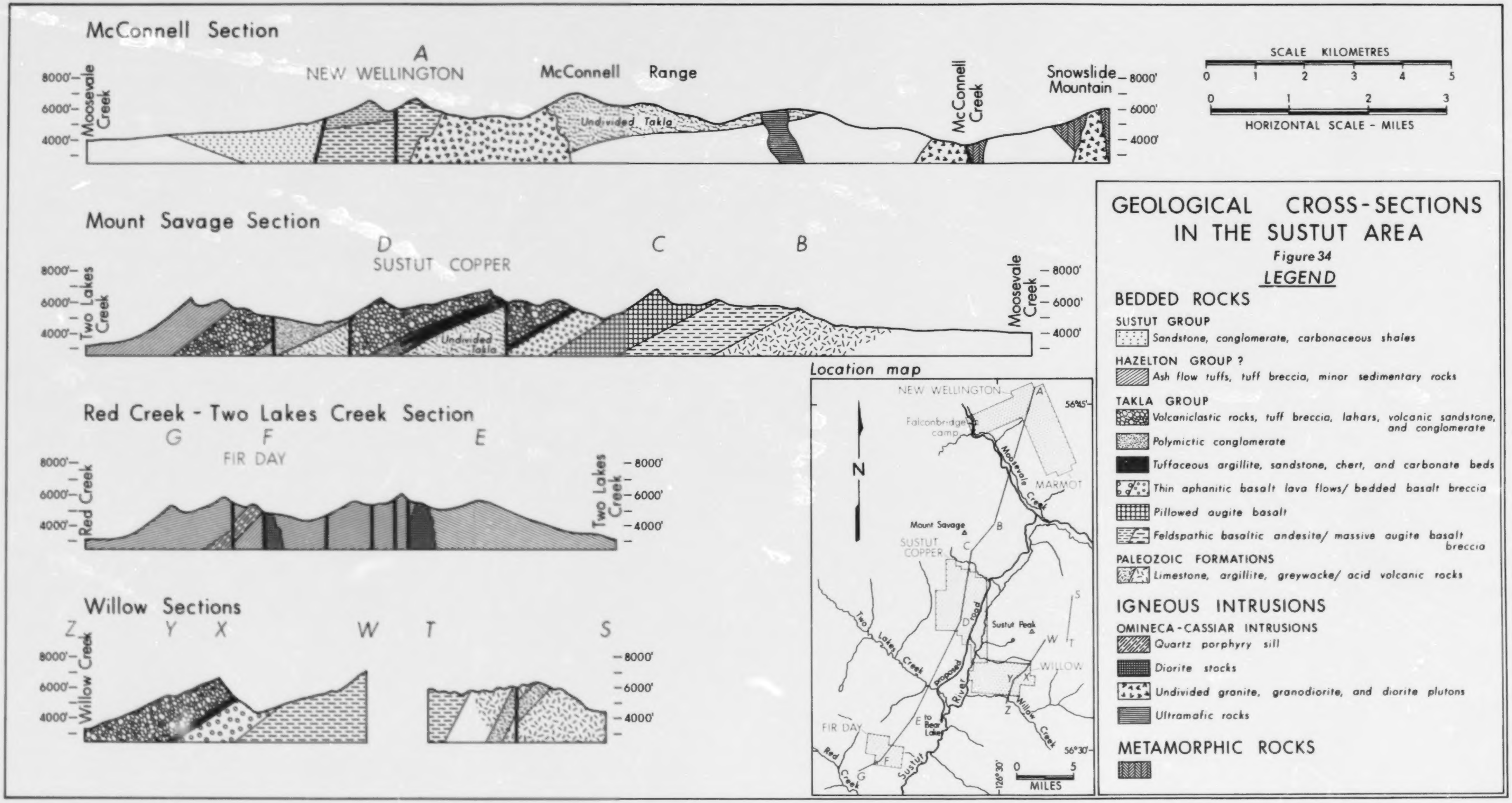
GLACIAL HISTORY: The history of valley glaciation along Johanson and Moose Valleys and the upper Sustut River is important because of the present extension of the Omineca Road beyond Johanson Lake.

The last Pleistocene events are recorded by successive terminal moraines, eskers, outwash deposits, trim lines, and strand lines, Fig. 33. With the retreat of the Moose Valley glacier to a point just north of the present position of Sustut Lake, much of the south part of the valley was flooded to an elevation of about 4,300 feet and drainage was to the south via Asitka Lake and the Asitka River. A second proglacial lake, with a strand line at 4,050 feet, developed to the west along a section of Sustut and Willow Valley, the outlet joining the Asitka River near the south end of Willow Valley. With further ablation the Moose Valley glacier withdrew to a position about 1 mile southeast of the junction of Moosevale Creek and the Sustut River becoming detached from a second ice lobe occupying the valley of Johanson Creek. The final Pleistocene episode resulting from the melting of tributary glaciers produced extensive accumulations of outwash sand and gravel on the valley floors. Subsequently this material has been reworked forming river benches and flats.

Much of the new extension of the Omineca Road has been routed over glacial outwash composed principally of gravel. The outwash forms terraces well above present stream level thus being well drained. In contrast sections of the road through areas of ground moraine are bouldery and difficult to construct and maintain because of the abundance of clay and resulting poor drainage. In a few places the road takes advantage of esker ridges and smooth river benches. A section of a projected side road is routed along the Sustut Valley traversing part of a strand line eroded from the valley wall.

GENERAL GEOLOGY: Detailed examination of the strata along a line of section just west of the Sustut River and across Moose Valley reveals rocks of diverse age and lithology (Fig. 34).

The oldest rocks of the area are found on the spur east of Sustut Peak and the lower east slopes of Mount Savage. These are Late Paleozoic strata which in the lower part consist of locally folded alternating coralline limestone and argillite beds. The rocks pass upward


McConnell Section
A
NEW WELLINGTON
McConnell Range
Moosevale Creek
Undivided Takla
McConnell Creek
Snowslide Mountain
8000'
6000'
4000'
SCALE KILOMETRES
0 1 2 3 4 5
0 1 2 3
HORIZONTAL SCALE - MILES
Mount Savage Section
D
SUSTUT COPPER
C
B
Two Lakes Creek
Undivided Takla
Moosevale Creek
Red Creek - Two Lakes Creek Section
G
F
FIR DAY
E
Red Creek
Two Lakes Creek
Willow Sections
Z
Y
X
W
T
S
Willow Creek
Location map
NEW WELLINGTON
A
56°45'
Falconbridge camp
Moosevale Creek
MARMOT
N
Mount Savage
B
SUSTUT COPPER
C
D
road
Sustut Peak
S
W
T
WILLOW
Y
X
Z
Two Lakes Creek
proposed River
E to Bear Lake
FIR DAY
F
G
Red Creek
Sustut
Willow Creek
56°30'
126°30'
0 5
MILES

GEOLOGICAL CROSS-SECTIONS IN THE SUSTUT AREA

Figure 34

LEGEND

BEDDED ROCKS

SUSTUT GROUP

▨ *Sandstone, conglomerate, carbonaceous shales*

HAZELTON GROUP ?

▨ *Ash flow tuffs, tuff breccia, minor sedimentary rocks*

TAKLA GROUP

▨ *Volcaniclastic rocks, tuff breccia, lahars, volcanic sandstone, and conglomerate*

▨ *Polymictic conglomerate*

■ *Tuffaceous argillite, sandstone, chert, and carbonate beds*

▨ *Thin aphanitic basalt lava flows/ bedded basalt breccia*

▦ *Pillowed augite basalt*

▨ *Feldspathic basaltic andesite/ massive augite basalt breccia*

PALEOZOIC FORMATIONS

▨ *Limestone, argillite, greywacke/ acid volcanic rocks*

IGNEOUS INTRUSIONS

OMINECA-CASSIAR INTRUSIONS

▨ *Quartz porphyry sill*

▦ *Diorite stocks*

▨ *Undivided granite, granodiorite, and diorite plutons*

▤ *Ultramafic rocks*

METAMORPHIC ROCKS

▨

through several thousand feet of section into a more regular sequence of mainly greywacke and argillite plus a thick sequence of spherulitic rhyolite. Triassic basalt breccias and augite and plagioclase-rich volcanic sandstones rest on the Paleozoic assemblage with little or no angular discordance.

The Mesozoic pile is readily subdivided into three fundamental rock stratigraphic units. The lowest unit, about 7,000 feet thick, is identified as mainly a submarine deposit consisting primarily of augite porphyry basalt with local intercalations of aphanitic basalt and coarse feldspar porphyry basaltic andesite. Massive volcanic breccia deposits predominate in this part of the section although lava flows, bedded breccias, and pillow lavas are locally conspicuous, Plate XIA. The middle unit consists of about 3,500 feet of what is believed to be mostly subaerial deposits of mixed andesite and basalt volcaniclastic rocks, lahars, tuff breccia, volcanic sandstone, and conglomerate beds – which rest on relatively thin fossiliferous Triassic tuffaceous argillite, chert, and carbonate beds. The uppermost unit, about 4,000 feet thick, comprises locally well-layered maroon and grey welded and nonwelded ash flow tuffs, and volcanic breccias ranging from basalt to rhyolite in composition, Plate XIB.

In the Willow area, east of the Sustut River, the equivalent lower and middle part of the section is repeated with only a few differences. The place of the bedded augite porphyry breccias in the Mount Savage section is here taken by a somewhat thicker sequence of thin aphanitic basalt lava flows.

These strata are cut by a series of plutons referred to generally as the Omineca intrusions, a wide assortment of stocks, sills, and smaller bodies of mostly granitic composition and Jurassic age.

The Sustut conglomerates, sandstones, and carbonaceous shales outcrop locally amid the glacial debris in Moose Valley. According to Lord (1948) these are Late Cretaceous – Early Tertiary age, the youngest lithified sedimentary rocks of the region. It appears that these beds have been faulted in a graben or half-graben system and protected from further erosion, Moose Valley itself being the final physiographic expression of this downward movement.

PROBLEMS OF STRATIGRAPHIC NOMENCLATURE: Important problems of nomenclature still confront the stratigrapher in dealing with both the Mesozoic and Paleozoic assemblages of the region. For example, according to Lord (1948) the name Takla, proposed by Armstrong (1949), is applicable to the entire Triassic and Jurassic section. However, Tipper (1959) suggests that there should be a division between the older Takla and younger Hazelton groups perhaps near the boundary of the Lower and Middle Jurassic. Unfortunately in this area precise structural or paleontological evidence of the discontinuity is missing.

Lithologically there seems to be two possibilities for the Takla-Hazelton division in the light of the present study. The first choice is the point of change in bulk composition of volcanic rocks. On the basis of numerous arc fusion analyses, the Mesozoic suite is readily divisible into an older northeastern belt of basalt with some andesite (Takla) and a younger southwestern belt of mainly dacite and andesite and minor rhyolite and basalt (Hazelton) (Fig. 35). This dividing line lies somewhat northeast of Two Lakes Creek lineament on the line of section. The second possible point of division is near where the Mesozoic assemblage becomes largely subaerial in origin; that is, at the base of the volcaniclastic unit or perhaps the base of the polymictic conglomerate. Both units reflect marked changes in the tectonic conditions of the area. It appears that shortly after, or

Plate XIA. Takla Group pillow basalt, Mount Savage area.

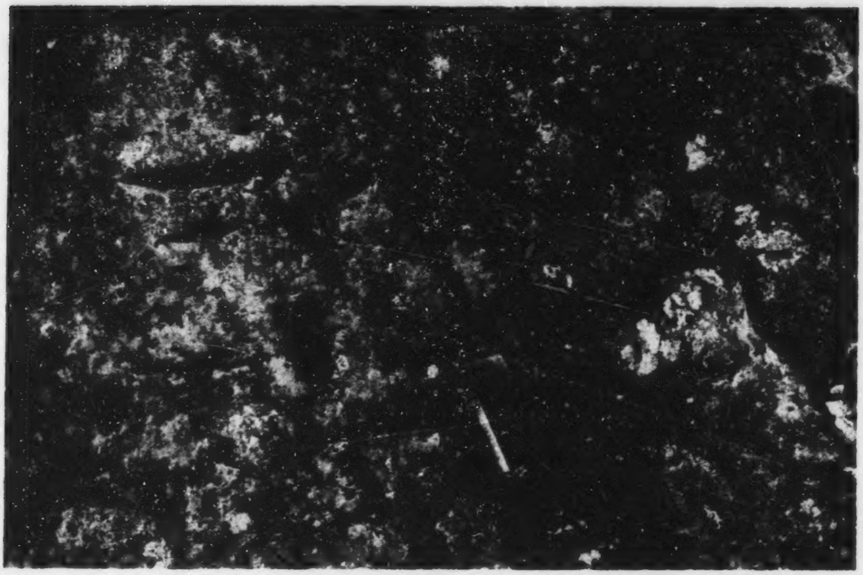


Plate XIB. Hazelton ? Group welded tuff breccia, near Red Creek.

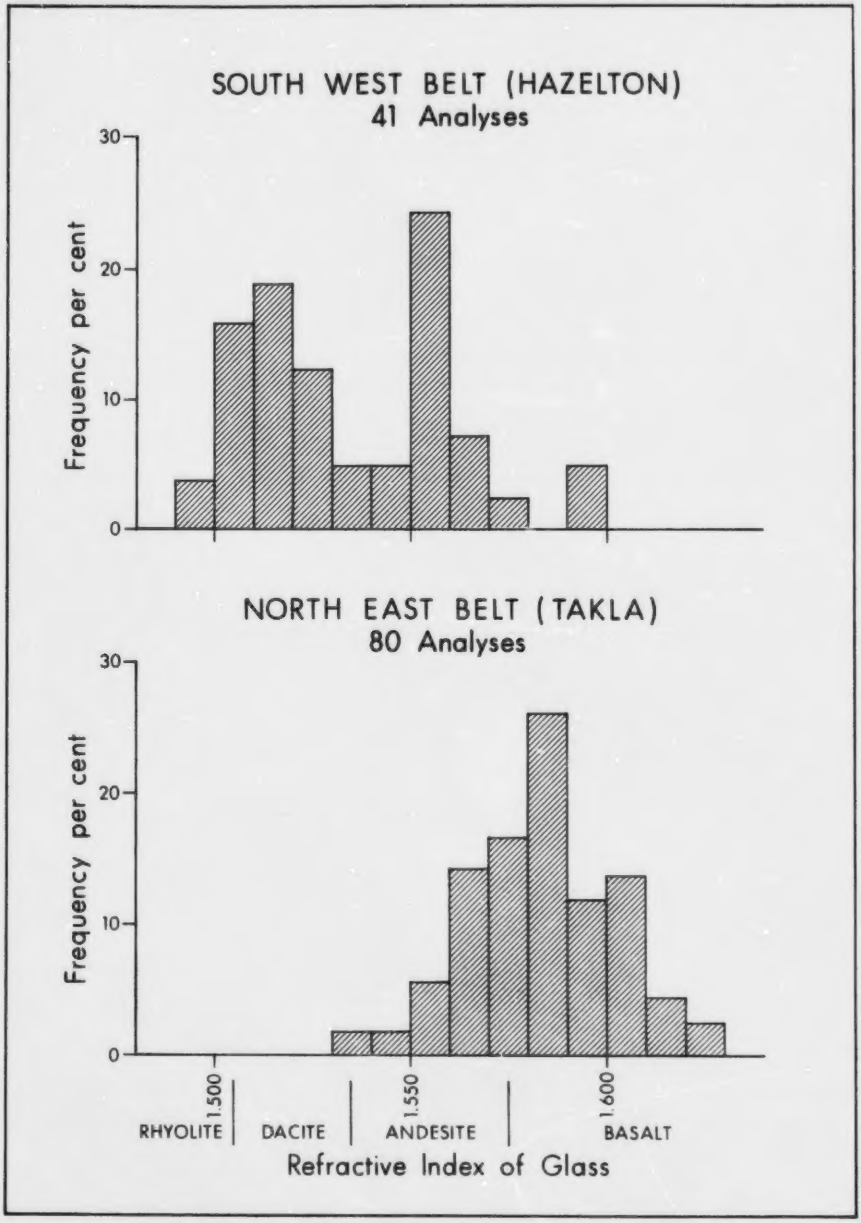


Figure 35. Composition range of some Mesozoic volcanic rocks in the Sustut area.

during the Late Triassic times, uplift in the southwest part of the area resulted in deep erosion of the Paleozoic and older Mesozoic terrain. This was accompanied by explosive volcanic activity which seemed to herald the important changes in the depositional cycle.

Concerning the Paleozoic rocks, Lord (1948) differentiated the Asitka and Cache Creek Groups. The Asitka, believed to be Early Permian (and older ?), is characterized by the presence of rhyolite lavas and breccias; the Cache Creek, thought to be Middle Permian (and older ?), typically displays an abundance of shales and carbonate beds. The validity of Lord's division is uncertain because neither the base of these successions is seen nor any of their contact relations described.

Recently Monger and Peterson, working in the Dewar Peak area north of Sustut, have redescribed some of the important Mesozoic and Paleozoic units and are currently attempting to resolve the outstanding stratigraphic and paleontological problems.

MINERALIZATION: Copper mineralization is widely distributed within the area in varied morphological and presumably diverse genetic types of deposits. Disseminated copper sulphide and native copper stratiform mineralization is found in local abundance in the volcaniclastic zone of the Mesozoic succession. Other occurrences include sulphide concentrations in the tuffaceous argillite, somewhat dispersed mineralization associated with the coarse feldspar porphyry volcanic rocks in the Lower Takla Group, and enrichments in small diorite stocks which intrude the Hazelton Group.

A more detailed account of the mineralization is given in the accompanying property descriptions.

REFERENCES: Tipper, H. W., 1959, *Geol. Surv., Canada,* Bull. 47, 51 pp.; Lord, C. S., 1948, *Geol. Surv., Canada,* Mem. 251, 72 pp.; Monger, J.W.H. and Peterson, I. A., 1974, *Geol. Surv., Canada,* Paper 74-1, Pt. A, p. 20.

GO (94D-79) (Fig. E, No. 37)

LOCATION: Lat. 56° 34′ Long. 126° 42′ (94D/10E)
OMINECA M.D. One mile west of the Sustut River, 20 miles east of Thutade Lake, at approximately 5,500 feet elevation.

CLAIMS: GO 13, 14, 16 to 18, 27, 28, 30, 31, OK 3, 9 to 12, PLUS 3 and 4, MAR 7, 11, 12, BEST 25.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METAL: Copper.

DESCRIPTION: Mineralization consists of scattered chalcopyrite found disseminated and in shears in chert pebble conglomerate of the Hazelton Group volcanic rocks.

WORK DONE: Airborne magnetometer and EM survey, 21.5 line-miles covering all claims.

REFERENCES: Assessment Reports 4198, 4700.

SUSTUT COPPER (94D-63) (Fig. E, No. 48)

By B.N. Church

LOCATION:	Lat. 56° 36' Long. 126° 41' (94D/10E) OMINECA M.D. Sustut Peak, 1 mile west of the Sustut River between elevations of 5,000 to 6,500 feet.
CLAIMS:	SUSTUT 1 to 9, 11, 12, 15, 21 to 23, 26, 28, 30 to 49, 52 to 62, 79 to 82, 111 to 149, 151, 153 to 157, 164 to 183.
OWNER:	WESFROB MINES LIMITED (wholly owned subsidiary of FALCONBRIDGE NICKEL MINES LIMITED), 500, 1112 West Pender Street, Vancouver V6E 2S3.
METAL:	Copper.
DESCRIPTION:	

INTRODUCTION: This report is a preliminary account of the major new copper discovery by Falconbridge Nickel Mines Limited in the Sustut district. The location is shown on Figure 34.

The information presented is based mainly on data obtained by the writer during a 10-day visit to the property in July 1973, during a mapping programme in the district.

HISTORY: The first reconnaissance geological survey was completed by Lord (1948). In his descriptions, numerous small mineral showings were identified in the volcanic members of the Mesozoic Takla Group.

Detailed exploration of the volcanic rocks began in 1966 on the New Wellington (Marmot) property in the McConnell Range and on the Northstar (Fred) property northeast of Kaza Lake. Prospecting consisted of trenching near old showings and some geochemical and geophysical work in adjacent areas.

Falconbridge's Sustut discovery came late in the 1971 field season. This culminated several years of intensive exploration by the company in the region. Although the discovery area had been previously explored by Union Oil Limited (1969) the search was for petroleum and no mineralization was noted at the time.

The initial showing was found by helicopter reconnaissance 3.5 miles northwest of Sustut Peak. A gently dipping slightly malachite-stained bed, locally in excess of 40 feet thick, was visually traced for about 3,000 feet along a cliff face. Subsequent investigation confirmed that the deposit was of major proportions and unique geologically.

The work completed to date on the Sustut property consists of preparation of detailed geological and topographical maps and an intense programme of diamond drilling.

PHYSIOGRAPHY: The Sustut claims cover much of the southern extremity of Mount Savage (Fig. 36). Slopes rise from a base level of 3,500 feet where the east boundary crosses the Sustut River to more than 6,800 feet elevation at the summit in the north central part of the property. The mountain here is tabular in general outline with a broad highly elevated and somewhat tilted upper surface (Plate XIIA). This surface is contained within a wall of sharp ridges and peaks on the west and south, and truncated by a sinuous line of precipitous cliffs on the east and north.

The Wesfrob camp is centrally positioned in this surface near two small ponds just south of a major re-entrant in the eastern cliffs. Access to the camps is difficult and virtually impossible from the north where the cliffs range from 500 to 800 feet high; to the south the cliffs are only 200 to 500 feet high and breached at many points by scalable chimneys.

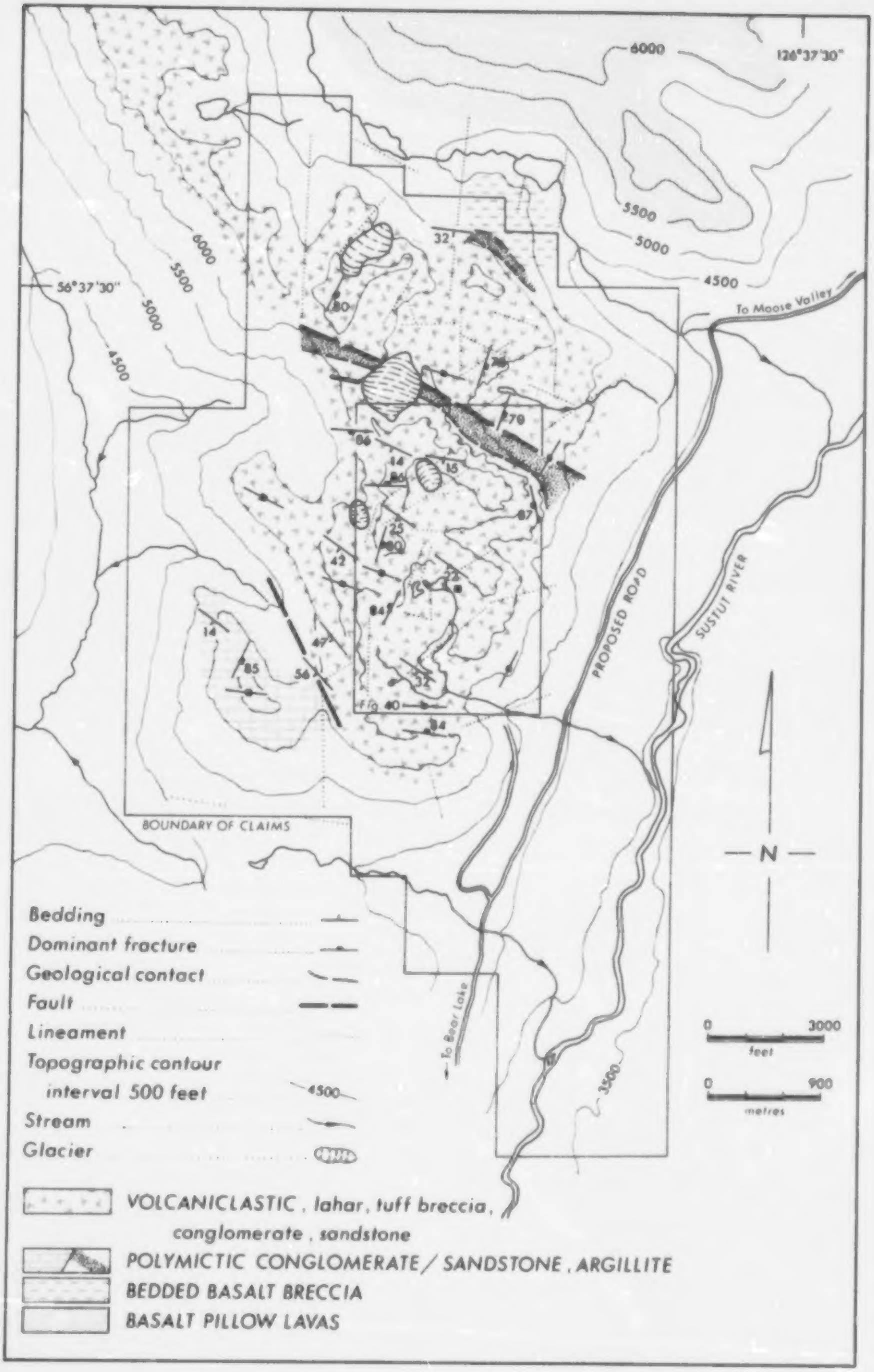

6000
126°37'30"
5500
5000
4500
To Moose Valley
56°37'30"
6000
5500
5000
4500
32
80
70
79
86
44
15
87
25
42
22
84
14
47
85
56
32
60
34
PROPOSED ROAD
SUSTUT RIVER
BOUNDARY OF CLAIMS
N
To Bear Lake
3500
0
3000
feet
0
900
metres
Bedding
Dominant fracture
Geological contact
Fault
Lineament
Topographic contour interval 500 feet
4500
Stream
Glacier
VOLCANICLASTIC, lahar, tuff breccia, conglomerate, sandstone
POLYMICTIC CONGLOMERATE / SANDSTONE, ARGILLITE
BEDDED BASALT BRECCIA
BASALT PILLOW LAVAS

Figure 36. Geology of Sustut Copper.

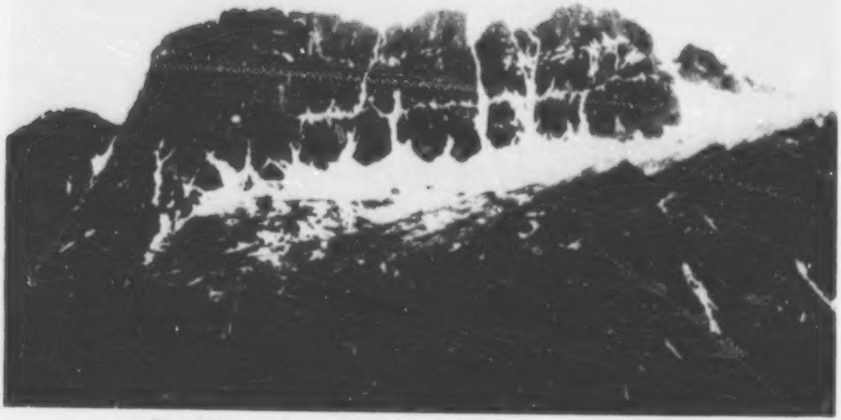


Plate XIIA. Sustut Copper, panoramic view of the north cliff area.

Plate XIIB. Sustut Copper, accretionary lapilli.

GENERAL GEOLOGY: The rocks exposed on much of the property belong to the middle part of the Mesozoic succession, a thickness of about 3,500 feet of volcaniclastic beds (Fig. 36). On the northern claims and near the north boundary, the Lower Takla is well exposed and consists of a thin *Halobia*-bearing siltstone-argillite formation (Triassic) and bedded basalt breccias overlying a great thickness of pillow lavas. A polymictic conglomerate in the southwest corner of the property appears to be faulted against the volcaniclastics – the conglomerate is possibly time equivalent of the sedimentary rocks to the north.

The volcaniclastic rocks comprise an assortment of resistant cliff-forming, grey and grey-green units. These consist of volcanic sandstone, conglomerate, tuff breccia, and lahar deposits; the latter predominating. Characteristically the lahars are rudely bedded and without much sign of internal layering or sorting. Blocks range to several feet in diameter and vary in shape from subangular to rounded. There is no detectable framework of coarse fragments, individual blocks being suspended in mud-size particles. The internal structure is best displayed on clean weathered surfaces free of liverwort growth near permanent ice and show patches. The composition of individual fragments is divided roughly equally between brownish andesite clasts characteristically charged with small rectangular plagioclase laths, and darker porphyritic basalt with stubby augite phenocrysts. Aphanitic andesite and basalt clasts are fairly common and usually non-amygdaloidal. Porphyritic basaltic andesite fragments with large plagioclase phenocrysts, as much as 1 inch in length, are conspicuous but rarely present in abundance. A single block of coarse pyroxenite was observed; other non-volcanic 'accidental' rock fragments are scarce.

Tuff breccia is intercalated throughout the lahars. These rocks are usually dark coloured and mottled in greenish and reddish shades. They are compact and massive consisting of unsorted angular lapilli and blocks, ranging to several centimetres in diameter, embedded in similar finer material. Accumulations of accretionary lapilli are present but scarce (Plate XIIB); bombs and other figure projectiles are unknown.

Arc fusion analysis of a representative suite of pyroclastic rocks gives a refractive index range 1.540 to 1.604; approximately 80 per cent of samples are basalt and 20 per cent andesite (Fig. 37). Chemical analysis of a mineralized sample with native copper proves to be intermediate in the composition range (see accompanying table).

ANALYSIS OF PYROCLASTIC BASALTIC ANDESITE

Oxides recalculated to 100 –

SiO_2	54.71
TiO_2	1.26
Al_2O_3	16.66
Fe_2O_3	0.28
FeO	8.26
MnO	0.18
MgO	5.15
CaO	7.08
Na_2O	5.73
K_2O	0.69
	100.00

Oxides as determined –

H_2O+	1.71
H_2O-	0.12
CO_2	0.37
P_2O_5	0.32
SrO	0.04
BaO	0.009
Cu	1.83
S	0.12
R.I.	1.579

Sample from the top of the north wall of the east re-entrant, Sustut Copper prospect (analysis by P. Ralph, Analytical Laboratory, British Columbia Department of Mines and Petroleum Resources).

Plate XIIIA. Sustut Copper, interbedded volcanic sandstone and conglomerate.

Plate XIIIB. Sustut Copper, volcanic sandstone with large fluvial cross-bed.

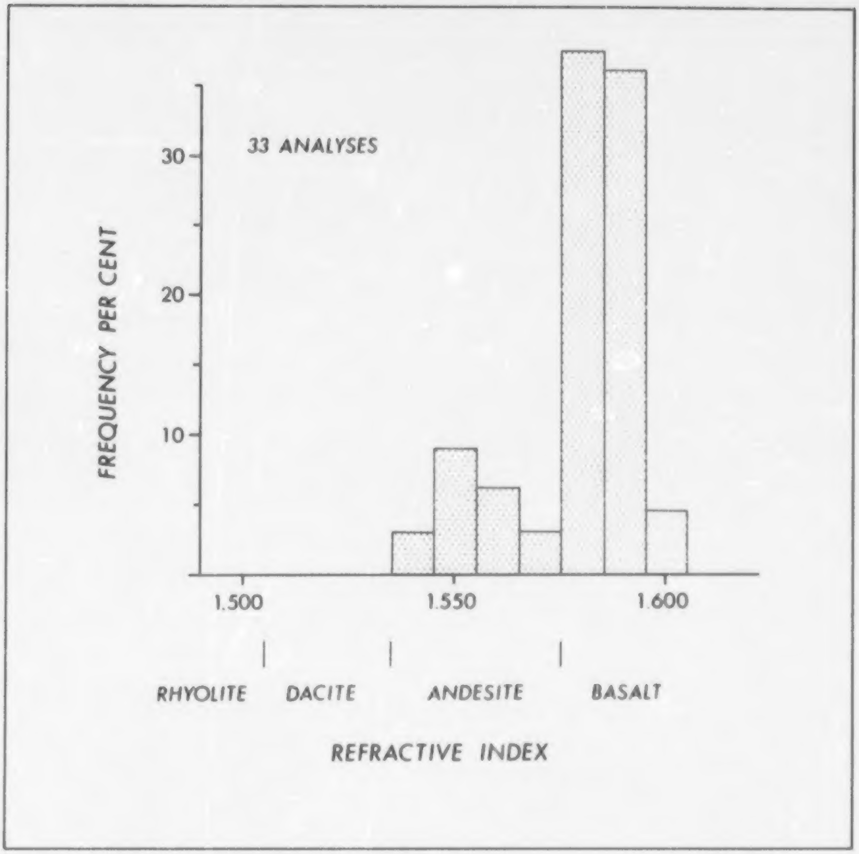


Figure 37. **Sustut Copper, composition range of the Mesozoic volcaniclastic rocks.**

Conglomerate and sandstone beds are concentrated in a zone midway through the volcaniclastic unit, roughly coincident with the plateau-like upper surface of the mountain. Compositionally these rocks are much like the lahars from which they were probably derived. The sandstones are often cross-bedded and form discontinuous lenses between conglomerate layers, apparently as a result of stream channelling (Plates XIIIA and B). Although not common, thin seams of dark reddish brown mudstone are locally conspicuous, interspersed in the coarse clastic assemblage. At several locations, bedding surfaces are exposed displaying large areas of mud cracks, indicating original subaerial conditions (Plate XIV).

STRUCTURE: Numerous measurements show that the strata are warped, forming a monocline-like structure. Near the summit bedding attitudes have an average strike of 100 degrees dipping 15 degrees southwest; farther south strikes swing more to the northwest and dips steepen with average attitudes approaching a strike azimuth of 140 degrees dipping 55 degrees southwest. An equal area plot of poles to bedding indicates a gentle fold axis with an azimuth of 167 degrees plunging 14 degrees southeast (Fig. 38).

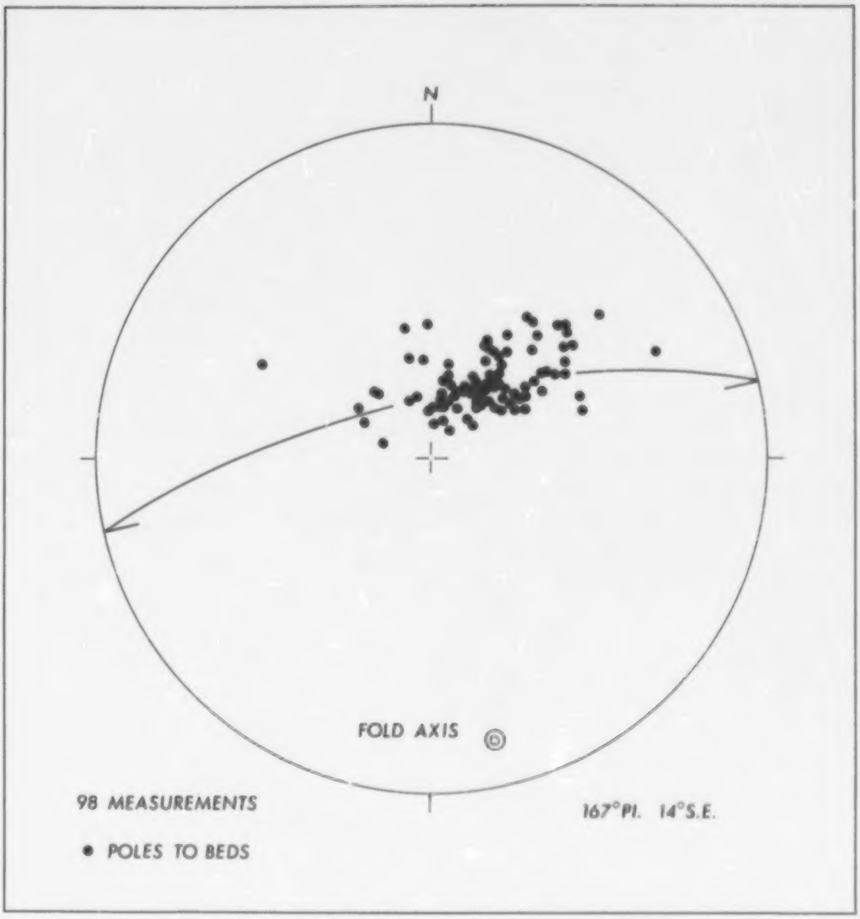


Figure 38. Sustut Copper, equal area plot of poles to beds.

Sets of steeply dipping cross-fractures, apparently controlling much of the topographic expression in the area, are developed almost perpendicular to the bedding and associated sheeting joints. A synthesis of cross-joint measurements is presented on Figure 39. The strongest fractures have an average strike of 020 degrees dipping 85 degrees southeast and 100 degrees dipping vertically; the latter set appears to control the direction of the north cliff face and cliffs bounding the east re-entrant; the former set is subparallel to the east cliffs and many other northerly trending lineaments on the property. Weaker near-vertical fractures striking about 167 degrees show little topographic expression except possibly the contact between the polymitic conglomerate and the volcaniclastic unit which is apparently a fault zone.

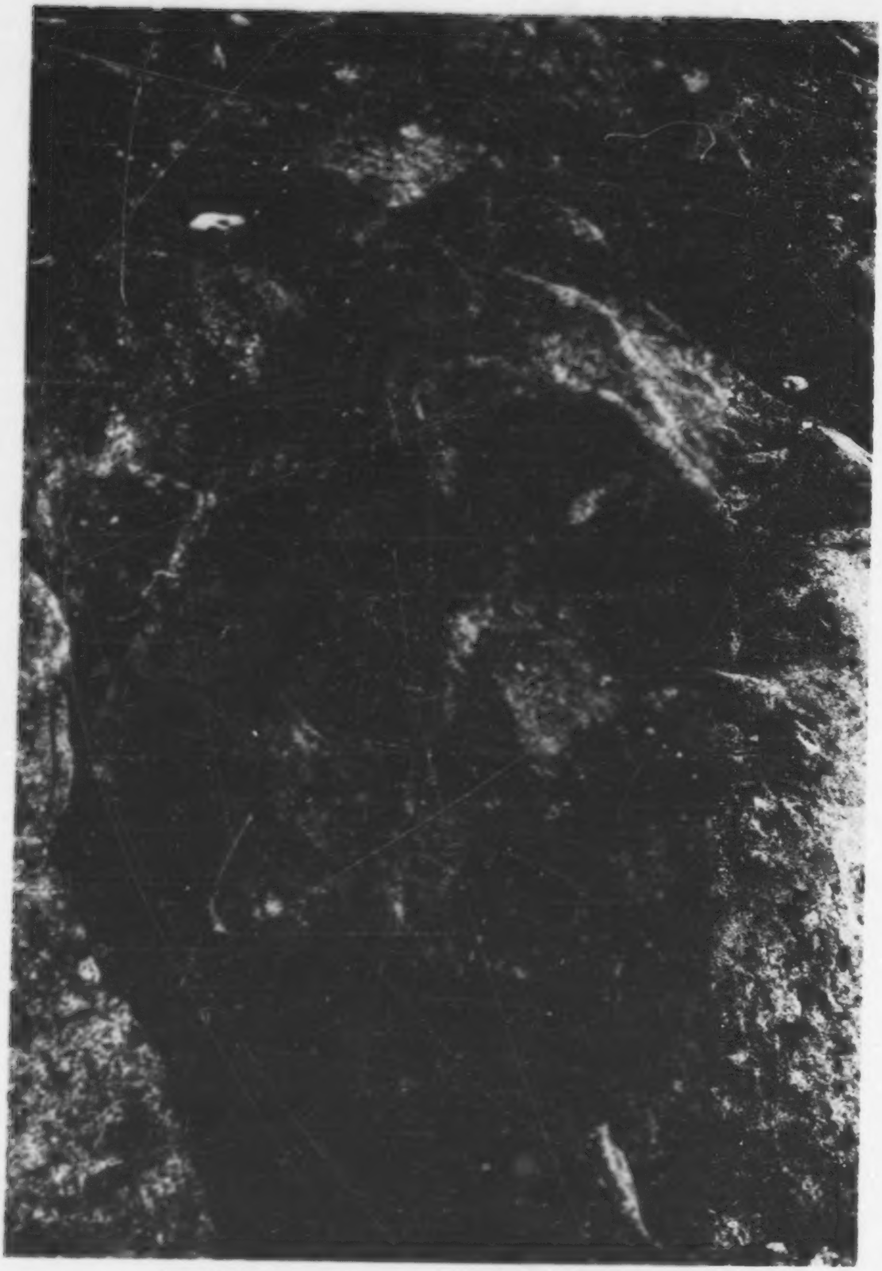


Plate XIV. Sustut Copper, mud cracks in volcaniclastic unit.

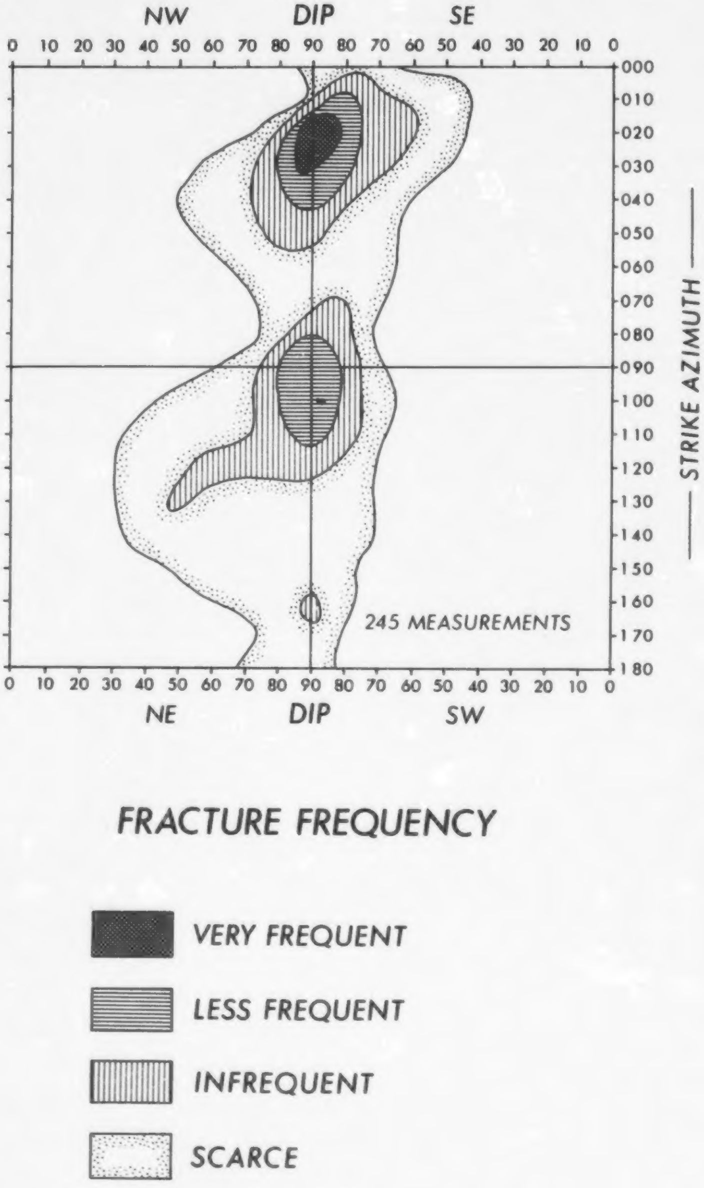


Figure 39. Sustut Copper, orientation of steep cross joints.

The only other major fault on the property is believed to pass near the base of the north cliff striking between 115 to 120 degrees. Many hundreds of feet of vertical displacement in this area is manifest by the repetition of the lower half of the volcaniclastic unit on the northern claims.

MINERALIZATION: Mineralization is found at many widely separated points on or just below the surface of the central plateau area, the best cross-section of the ore being viewed near the top of the east cliffs and in the east re-entrant. These cliff showings are generally marked by minor green malachite and slight rust staining and red 'copper moss' growth on a number of adjacent beds.

Close examination reveals chalcocite and lesser amounts of bornite, chalcopyrite, and native copper impregnated in lahars, tuff breccia, and conglomerate, mostly as small blebs and grains in the matrix between and peripheral to the clasts (Plates XV and XVI). Commonly the adjacent rocks are slightly silicified and locally strongly epidotized.

Mineral zoning is apparent from the description of A. Sutherland Brown (personal communication) of diamond-drill hole No. 1 located about 500 feet south of the east re-entrant. Here the mineralized horizon, about 50 feet thick, is first intersected at a depth of 75 feet. The zoning consists of an envelope of weak pyrite dissemination followed inward by a chalcopyrite-bornite shell and a bornite, chalcocite, native copper core; the total mineralized section grading 2.47 per cent copper.

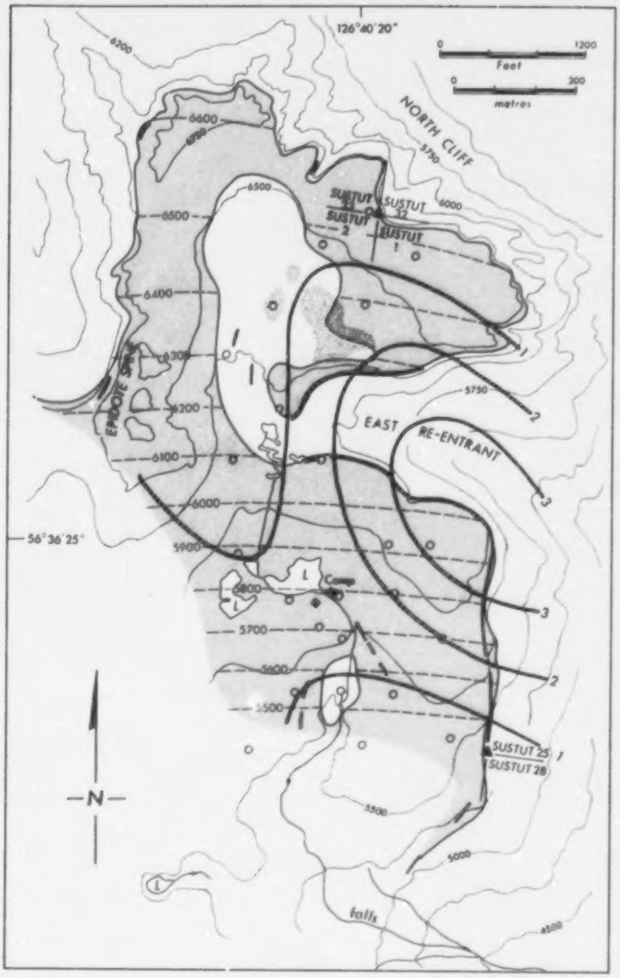
According to company report, a preliminary programme of diamond drilling indicates the size of the deposit as a few tens of millions of tons grading in excess of 1 per cent copper. A single sample of basaltic lahar containing both chalcocite and native copper collected by the writer assayed 1.83 per cent copper.

The lateral extent of the mineralized horizon, about one-half square mile, is proved by a computer-fitted polynomial surface* which ties the main showings to many outlying minor exposures (Fig. 40). This fitted surface is warped downward to the south as predicted by numerous bedding measurements. In the north, the surface coincides almost with the top of the mineralized zone; in the south it cuts somewhat below.

The strike of the computed surface is more easterly oriented, especially in the south parts, than the bedding; also, dips range from 7 degrees in the north to 18 degrees in the south, averaging about 10 degrees less than bedding measurements. This apparent contradiction may be accounted for by a regular pattern of downward movement of slightly faulted panels along the easterly trending fractures, the north panels moving down relative to those adjoining on the south. Alternatively, it is possible that the mineralization is concentrated near the top of a northerly thinning facies; a clastic wedge with an upper boundary having a primary inclination of about 10 degrees to bedding.

According to the preliminary diamond-drill results, the thickness of the ore ranges in excess of 130 feet in a few holes. Using the drill data, computer-fitted isopach contours* have been determined and superimposed on the idealized fitted surface of mineralization (Fig. 40). This shows that the greatest ore thickness, more than 35 feet thick in grades greater than 0.75 per cent copper, is contained within the first contour, the thinner parts being mostly excluded. Although the isopach fit is a rough one, the projection does indicate that much high-grade ore has been eroded from the east cliffs and east re-entrant area.

*Computer manipulations by A. Bowman, Geological Division, British Columbia Department of Mines and Petroleum Resources.


126°40'20"
0
1200
Feet
0
300
metres
NORTH CLIFF
6200
6600
6500
SUSTUT 33
SUSTUT 32
SUSTUT 2
SUSTUT 1
6000
5750
6800
6400
6300
6200
6100
EPIDOTE SPRING
EAST RE-ENTRANT
56°36'25"
6000
5900
5800
L
Camp
5700
5600
5500
1
2
3
SUSTUT 25
SUSTUT 28
N
5500
5000
falls
4500

LEGEND

EXPOSURE OF COPPER MINERALIZATION

MINOR PYRITE DISSEMINATION

PROJECTED BEST FIT SURFACE OF MINERALIZATION (FIFTH ORDER POLYNOMIAL PLANE)

TOPOGRAPHIC CONTOUR, INTERVAL 250 FEET — 5000 —

STRUCTURE CONTOUR ON FITTED SURFACE OF MINERALIZATION, INTERVAL 100 FEET — 5900 —

PROJECTED ISOPACH FOR ORE GRADES GREATER THAN 0.75 PER CENT COPPER (FOURIER FUNCTION) 3

SYMBOLS

DIAMOND-DRILL HOLE ○ LAKE L

CLAIM CAIRN ▲ STREAM

FRAME BUILDING ■

Figure 40. Sustut Copper, computer fitted 'surface of mineralization' and 'ore isopachs.'

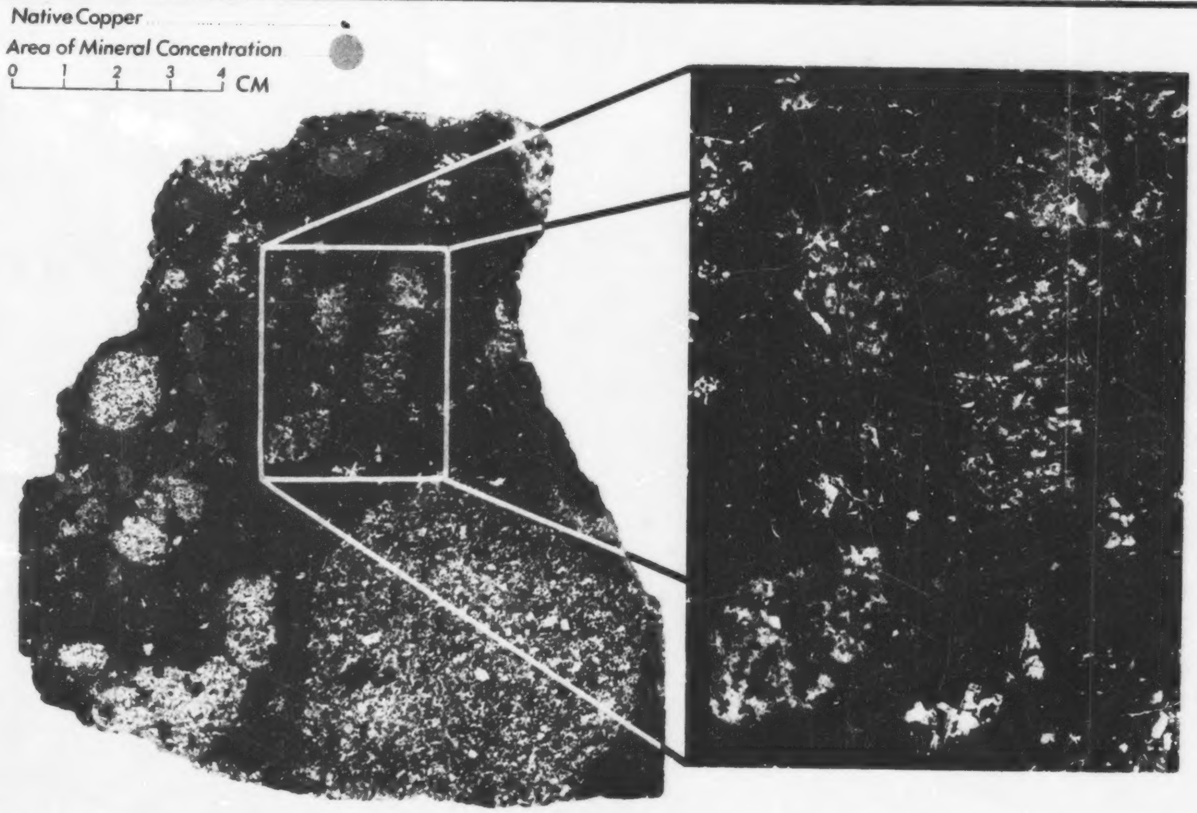

Native Copper
Area of Mineral Concentration
0
1
2
3
4
CM

Plate XV. Sustut Copper, disseminated native copper (red) in lahar.

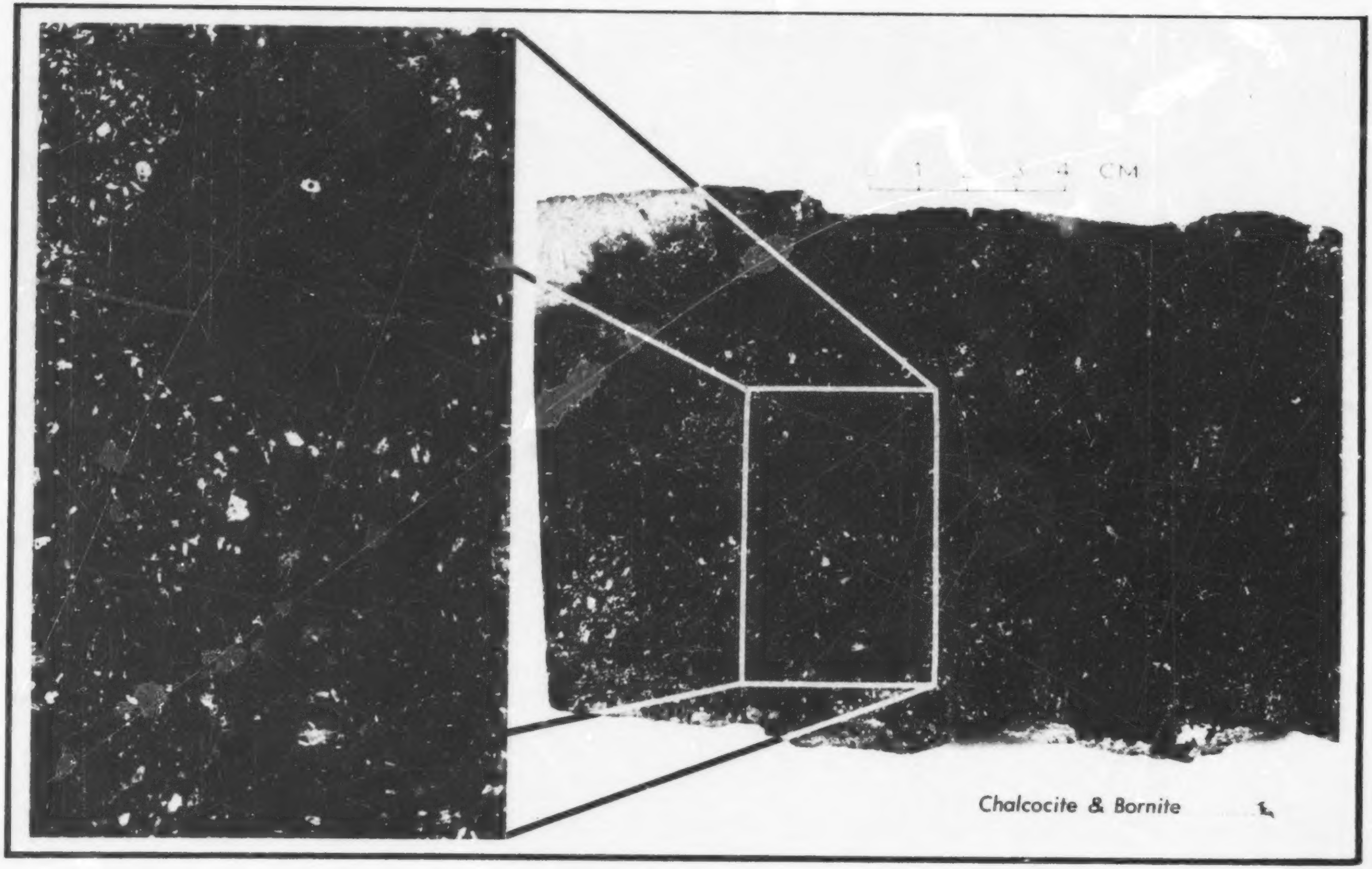

1 2 3 4 CM
Chalcocite & Bornite

Plate XVI. Sustut Copper, patches of chalcocite and bornite (red) in tuff breccia.

The origin of the mineralization is of considerable importance in the search for similar deposits in the vicinity and elsewhere. Both syngenetic and epigenetic origins are considered. The stratiform nature of the deposit initially suggests a syngenetic origin. Little mineralization is found much below or above a planar surface in the middle of the volcaniclastic pile. That copper sulphides and native copper can accumulate and precipitate in basalt under magmatic conditions is known (Cornwall, 1951; Baragar, 1969). However, the process of erosion, transportation, and deposition of the mineralized fragments at Sustut must have been complex because of the diverse constitution of the host rocks.

The presence of copper sulphides and native copper in fractures (Plate XVII) is no strong argument against syngenesis because groundwater might be expected to disperse some of the primary ore.

The main evidence against syngenesis is the arrangement of the minerals as noted by A. Sutherland Brown. It is unlikely that this zonal symmetry could be caused by any primary sedimentary control even in combination with some possible supergene effect.

Considering the alternate epigenetic hypothesis, it can be argued that hydrothermal solutions entered the permeable conglomerate and sandstone beds ascending along the fissure systems, the solutions being eventually trapped in layers of impervious tuff breccia and lahar beds. This is analogous to the theory proposed by Wilson (1955) to explain the copper deposits of the Boleo District of Mexico. The extensive epidotization along steep cracks, sheeting, and in association with the ore at Sustut certainly suggests a period of marked hydrothermal activity.

Entry of the solutions into the volcaniclastic pile must have occurred after some fracturing but before regional metamorphism sealed the interstitial rock pores. This event probably pre-dated the period of granitic intrusions in the region and may have taken place soon after deposition of the volcaniclastic rocks, the ultimate source being related to volcanism. No granitic intrusions and only a few basalt dykes are found on the property.

The geological events leading to mineralization at Sustut appear to be generally similar to the recent record on the island of Sao Miguel in the Azores, although no copper deposit is known to be associated with the latter. Drilling by the Glomar-Challenger expedition reveals a subaerial sequence of lahars and pyroclastic rocks extending 700 metres below sea level. This is underlain by transitional marine sedimentary rocks, about 100 metres thick, followed by pillow lavas to the base 981 metres below sea level (Muecke, *et al.*, 1974). It appears that here present volcanic eruption and deposition matches the rate of subsidence on the Mid-Atlantic rift. It is interesting to note that the upper volcaniclastic beds are partially epidotized and emit steam and solutions in excess of 200 degrees centigrade from permeable zones.

The Sao Miguel-Sustut comparison applies only to the volcanic-sedimentary succession. In broader aspect the analogy is not so strong. For example, it is unlikely the mid-oceanic setting of the Azores could equate with Sustut paleogeography. The historical proximity of sialic crust at Sustut is demonstrated by the abundance of siliceous volcanic rocks in the older Paleozoic (Asitka Group) and younger Mid-Mesozoic (Hazelton ?) assemblages.

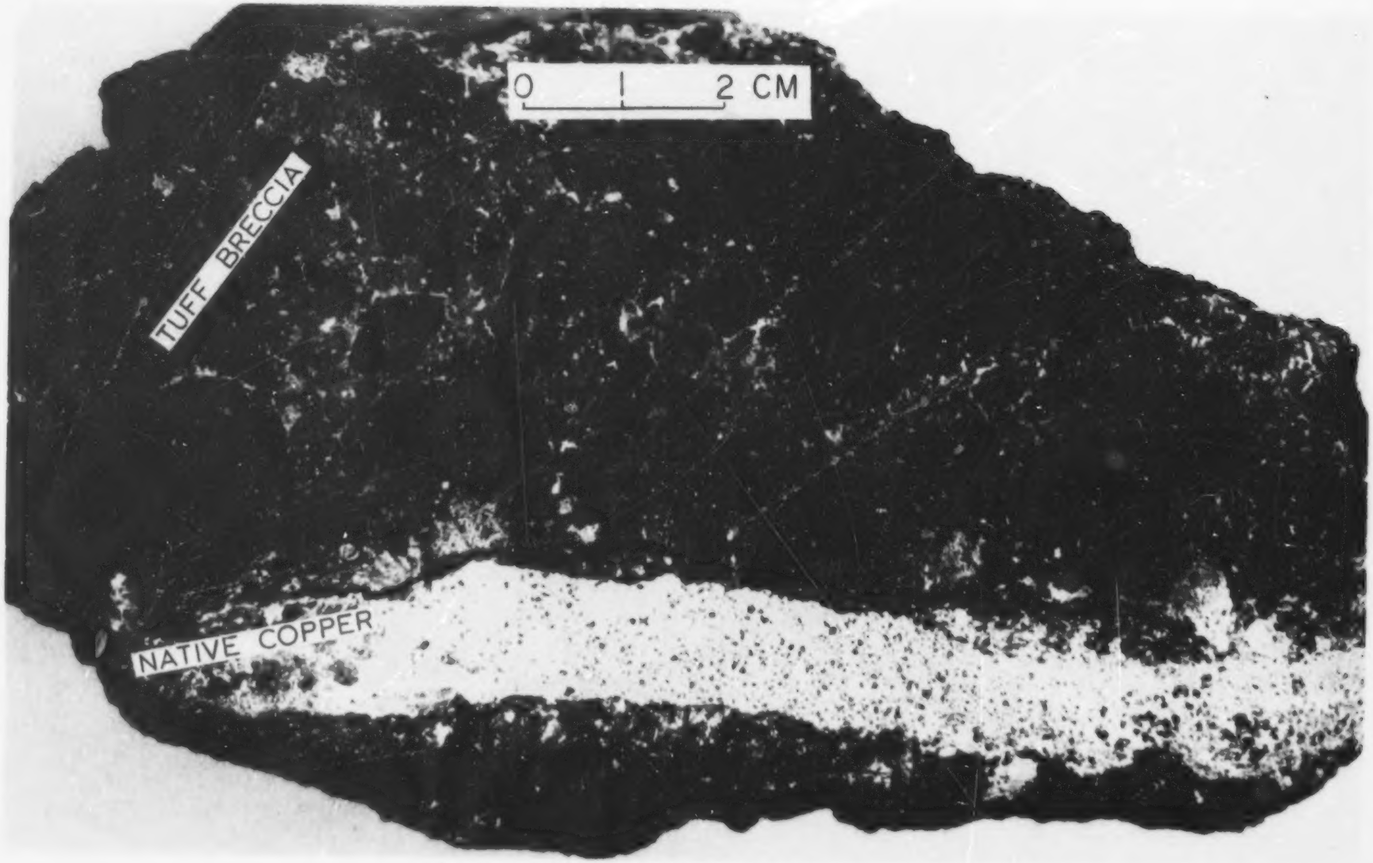

0
2 CM
TUFF BRECCIA
NATIVE COPPER

Plate XVII. Sustut Copper, vein of native copper in tuff breccia.

REFERENCES: Muecke, G. K., Ade-Hall, J. M., Aumento, F., Hyndman, R. D., and Reynolds, P. H., 1974, Deep Drilling of Oceanic Islands, *G.A.C./M.A.C.*, Program, Abstracts, 3rd Circular, p. 64; Baragar, W.R.A., 1969, The Geochemistry of Coppermine River Basalts, *Geol. Surv., Canada,* Paper 69-44, p. 43; Cornwall, H. R., 1951, Differentiation in Lavas of the Keweenawan Series and the Origin of the Copper Deposits of Michigan, *Geol. Soc. Am.*, Bull., Vol. 62, pp. 159-202; Lord, C. S., 1948, Geology of the McConnell Creek Map-Area, Cassiar District, British Columbia, *Geol. Surv., Canada,* Mem. 251, p. 72; Wilson, I. F., 1955, Geology and Mineral Deposits of the Boleo Copper District, Baja California, Mexico, *U.S.G.S.*, Prof. Paper 273, p. 134.

WILLOW (Fig. E, No. 109)

By B. N. Church

LOCATION: Lat. 56° 33' Long. 126° 36' (94D/10E)
OMINECA M.D. North of Willow Creek and 2.5 miles due south of Sustut Peak, between 3,500 and 6,700 feet elevation.

CLAIMS: WILLOW 3 and 4, WILL 4 to 6, 37 to 54.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METAL: Copper.

DESCRIPTION:

The property adjoins the southeast claims of the Sustut group, but is south of the Sustut River, centred on an easterly trending ridge.

Characteristically the area is rugged with slopes rising from about 3,500 feet on the Sustut River at the west boundary to an elevation of 6,700 feet 1 mile east on the west of the ridge. The ridge is a cuesta with an abrupt escarpment on the north and a gentle southerly slope roughly parallel to the beds which strike 120 degrees and dip 30 degrees southwest.

The geology is similar to that of the Sustut property, although the mineralized beds are different lithologically and at a lower horizon. At the Willow property the Takla augite porphyry breccias are overlain by a sequence of thinly bedded aphanitic basalt lavas, and in turn a thickness of a few hundred feet of fossiliferous shales, chert, and carbonate beds, and, uppermost, a thick volcaniclastic unit (Fig. 34, section W-Z). The strata are offset locally by faults subparallel to a strong set of cross-joints striking 025 degrees and dipping 85 degrees southeast (Plate XVIIIA).

The mineralization is in the sedimentary band in a thin discontinuous tuffaceous argillite bed just below the base of the volcaniclastic unit. Both chalcopyrite and chalcocite have been identified forming discrete grains, often less than 1 millimetre in diameter disseminated in varying concentrations but constituting as much as 30 per cent by weight of some rock samples (Plate XVIIIB). The occurrence is generally similar to the Northstar (Fred) copper prospect near Kaza Lake, 38 miles to the south (Sutherland Brown, 1967). However, the Northstar showing is associated with coarse feldspar porphyry basaltic andesite volcanic rocks, believed to be stratigraphically low in the Takla succession.

WORK DONE: Surface diamond drilling, two holes totalling 3,100 feet on Willow 3 and 4.

REFERENCE: *Minister of Mines, B.C.,* Ann. Rept., 1967, pp. 86-88.

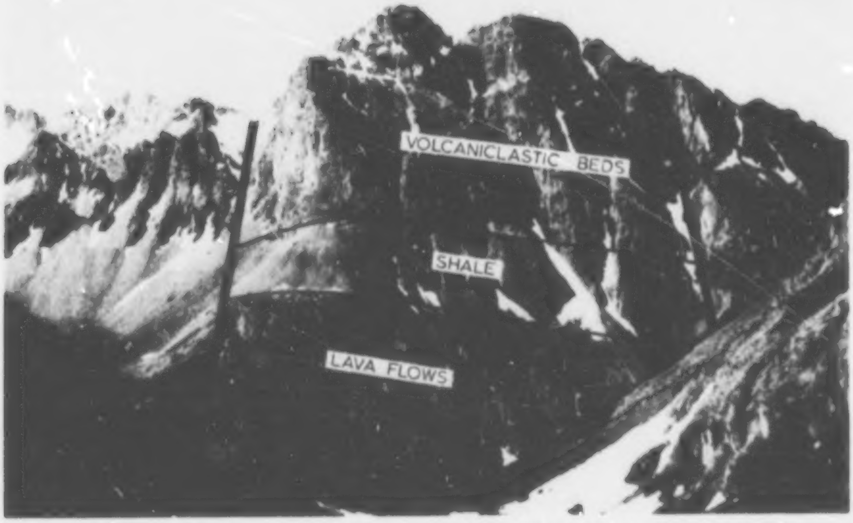

VOLCANICLASTIC BEDS
SHALE
LAVA FLOWS

Plate XVIIIA. View of the Takla succession in the Willow Creek area, looking west.

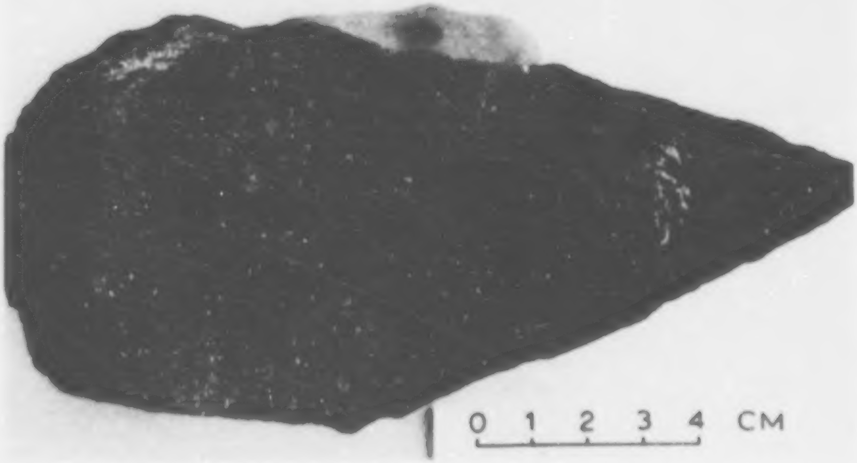


Plate XVIIIB. Willow prospect, chalcopyrite grains disseminated in tuffaceous argillite.

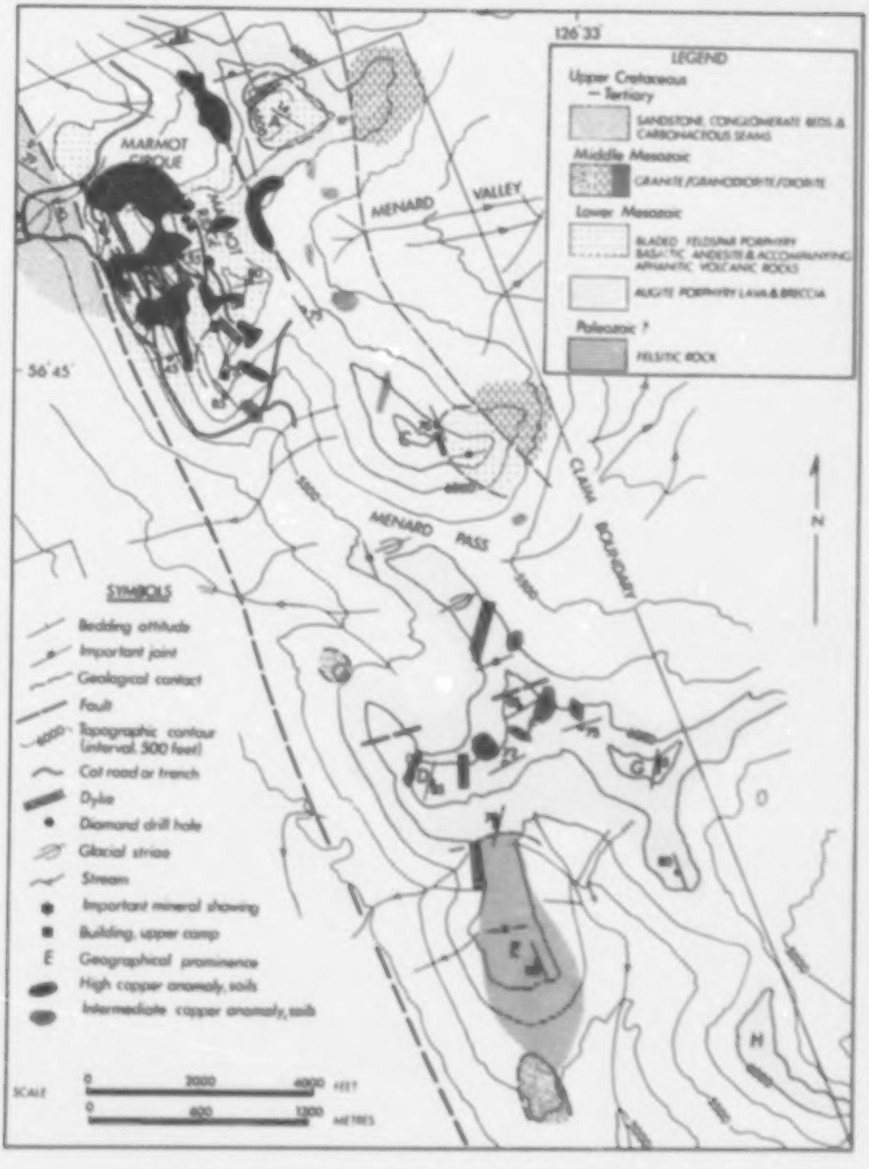

126°33'
LEGEND
Upper Cretaceous – Tertiary
SANDSTONE, CONGLOMERATE BEDS & CARBONACEOUS SEAMS
Middle Mesozoic
GRANITE/GRANODIORITE/DIORITE
Lower Mesozoic
BLADED FELDSPAR PORPHYRY BASALTIC ANDESITE & ACCOMPANYING APHANITIC VOLCANIC ROCKS
AUGITE PORPHYRY LAVA & BRECCIA
Paleozoic ?
FELSITIC ROCK
MARMOT CIRQUE
MARMOT RIDGE
MENARD VALLEY
MENARD PASS
CLAIM BOUNDARY
56°45'
N
A
B
C
D
E
F
G
H
5500
6000
SYMBOLS
Bedding attitude
Important joint
Geological contact
Fault
6000 Topographic contour (interval 500 feet)
Cat road or trench
Dyke
Diamond drill hole
Glacial striae
Stream
Important mineral showing
Building, upper camp
E Geographical prominence
High copper anomaly, soils
Intermediate copper anomaly, soils
SCALE
0
2000
4000 FEET
0
600
1200 METRES

Figure 41. Geology of the Marmot prospect, Menard Creek area.

(94D/10E, 15E)

MARMOT (94D-5) (Fig. E, No. 10)

By B. N. Church

LOCATION: Lat. 56° 45' Long. 126° 34' (94D/10E, 15E)
OMINECA M.D. McConnell Range, at the headwaters of Menard Creek, at approximately 6,500 feet elevation.

CLAIMS: MARMOT 1 to 141.

OWNERS: Wesfrob Mines Limited and New Wellington Resources Limited.

OPERATOR: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METAL: Copper.

DESCRIPTION:

INTRODUCTION: The Marmot claims are in the McConnell Range on a low southerly trending ridge that forms a divide between Moose Valley and the headwaters of Menard Creek, a tributary of the Ingenika River (Fig. 34). This report is based on an eight-day visit to the area by the writer in July 1973 and assessment reports on file with the Government.

HISTORY: Mineralization was apparently first discovered by C. S. Lord while mapping for the Geological Survey of Canada during the period 1941 to 1945. Assay results on samples from a shear zone near the source of Menard Creek yielded significant gold, silver, and copper values. It was not until 1966, however, that prospector W. D. Savage located claims on this showing and the adjacent areas of mineral potential. New Wellington Resources Limited, the principal owner, acquired the key claims, known as the Marmot group, in the same year. Subsequently the property was optioned to Texada Mines Ltd. and currently an option is held by Wesfrob Mines Limited.

The initial work on the property included about 10 miles of trenching and access road construction, five diamond-drill holes totalling 783 feet, and geological and geochemical surveys. More recently, there has been an EM-magnetometer airborne survey and an additional five diamond-drill holes. A bulldozer road links the property to a well-equipped camp and airstrip on the banks of Moosevale Creek, situated about 3 miles to the west.

PHYSIOGRAPHY: The map-area lies astride a thin belt of interconnected ridges at the head of Menard Valley at a point where deep transverse erosion has virtually severed the southern axis of the McConnell Range.

Except for cirqued northerly and easterly slopes, the area is characteristically gentle in profile having been smoothed by the last advance of Pleistocene ice. The point of maximum elevation, a peak in the northern extremity of the map-area, is 6,734 feet above mean sea level and about 3,000 feet above the floor of Moose Valley to the west.

Bedrock is well exposed only on the steep headwalls of cirques; ridge crests and upper slopes being largely mantled in regolith. The slopes below timberline, about 5,000 feet, are covered with ground moraine and thick glacial outwash.

GENERAL GEOLOGY: The geology of the area is shown on Figure 41. A central panel of Takla volcanic rocks is bounded by younger Sustut sedimentary rocks on the west and the Omineca batholith on the east.

BEDDED ROCKS

Takla Group: The Takla rocks are mainly basic volcanic breccias and lavas equivalent to Lord's 'lower division.'

The best section is exposed on peak A, north of Menard Valley. Here coarse plagioclase-rich lavas capping the peak rest on minor tuffaceous beds and a thick assemblage of augite-rich lavas and breccias, the total succession dipping gently to the northeast.

The upper feldspathic unit is more fully preserved to the southwest on Marmot Ridge. Petrographically, these rocks are unusual in that they are characterized by exceptionally large euhedral plagioclase plates, some as much as 4 centimetres long. These are embedded in a fine-grained grey, greenish or reddish brown matrix often consisting of aligned plagioclase microlites (1 to one-quarter millimetre long), magnetite granules, and, less commonly, subhedral augite crystals. The total feldspar content is between 60 and 70 per cent. The composition of the large plagioclase phenocrysts is in the range An_{45} to An_{50}; plagioclase microlites are generally more sodic, ranging to oliogclase. Few are completely fresh. Mixtures of albite, clay, and carbonate minerals replacing primary feldspar are accompanied by patches of chlorite and epidote in many rocks.

The augite-rich volcanic rocks underlie much of the area to the south on peaks D, F, G, and H. Except possibly for the east spur of peak C, the upper unit has been largely stripped away by erosion leaving only a few coarse plagioclase porphyry feeder dykes. Characteristically, these rocks are dark coloured, massive, and resistant to erosion. Augite phenocrysts, some measuring as much as 8 millimetres in diameter, are conspicous and form 10 to 20 per cent of the rock. Commonly the rocks also contain an abundance of phenocrysts which prove to be mixtures of serpentine and talc pseudomorphic after olivine – these grains are generally fewer, smaller, and more rounded than the co-existing pyroxene. Plagioclase phenocrysts (labradorite) are generally scarce. Most of the feldspar, about one-third the total volume of the rock, occurs as small randomly oriented laths intermixed with pyroxene grains and magnetite in the groundmass.

According to arc fusion analyses, the augite-rich lavas and breccias are basalts with a refractive index range of 1.596 to 1.625. The plagioclase-rich varieties are best described as basaltic andesites with an R.I. range of 1.561 to 1.601. Together the entire volcanic assemblage is bimodal in character (Fig. 42). It is interesting to note that the aphanitic samples collected have approximately the same average refractive index as the plagioclase porphyries with which they are interbedded – only a few aphanites are more salic.

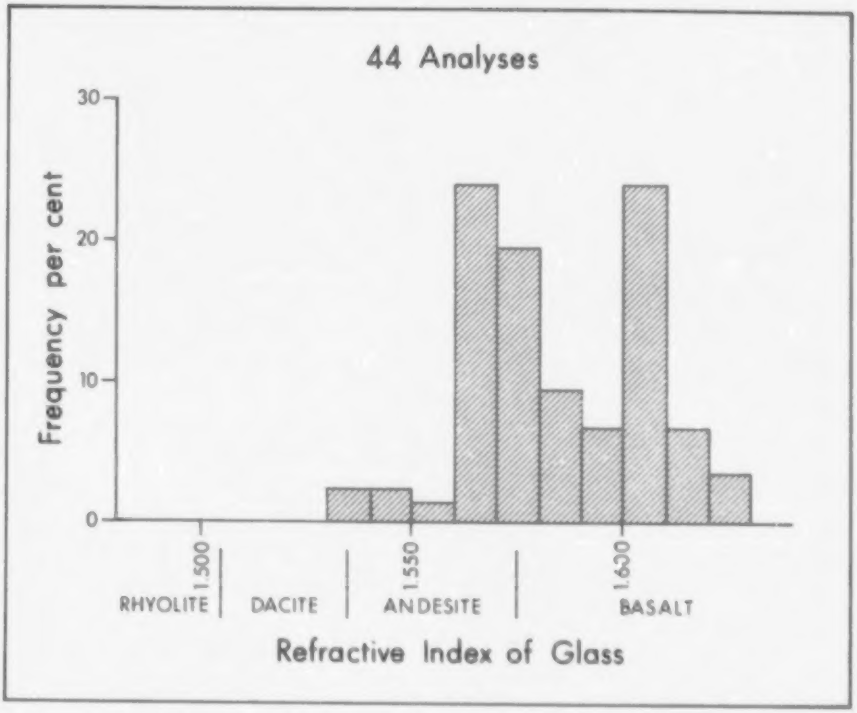


Figure 42. Composition range of Takla volcanic rocks, Menard Creek area.

Examination of the chemical data on specimens collected by the writer show that these diverse rocks may be related genetically. Calculations based on analyses of some typical samples indicates that removal of mainly pyroxene (by crystal fractionation) from augite porphyry No. 2 could produce a magma similar in composition to the plagioclase porphyry No. 1. It is interesting to note that the crystal cumulate resulting from this process would be similar to the peridotite No. 3 collected from the deeply eroded ultramafic belt 4 miles east of the map-area.

Sustut Group: The Sustut beds, considered to be Upper Cretaceous - Lower Tertiary age are exposed in small areas along roads and stream courses in the northwest part of the map-area. These rocks are mainly poorly indurated, light grey sandstones and conglomerates with intercalated dark carbonaceous seams. Mapping by Lord shows similar units exposed locally through the glacial deposits on the floor of Moose Valley. Bedding attitudes are consistently inclined to the northeast indicating downward rotation of the strata against a major gravity fault which evidently strikes parallel along much of the east side of Moose Valley. The total stratigraphic thickness is unknown but must be at least several hundreds of feet.

CHEMICAL ANALYSES OF TAKLA VOLCANIC ROCKS AND PERIDOTITE

	1	2	3
Oxides Recalculated to 100 –			
SiO_2	53.20	48.05	49.24
TiO_2	0.93	0.75	0.37
Al_2O_3	16.97	10.20	2.71
Fe_2O_3	4.89	5.98	4.72
FeO	4.82	5.89	5.01
MnO	0.18	0.19	0.16
MgO	6.09	14.45	18.11
CaO	7.44	12.60	19.46
Na_2O	3.08	1.34	0.20
K_2O	2.40	0.55	0.02
	100.00	100.00	100.00
Oxides as Determined –			
H_2O+	1.54	2.09	1.48
H_2O-	0.19	0.79	0.03
CO_2	0.27	0.00	0.02
P_2O_5	0.37	0.42	< 0.18
S	0.01	< 0.01	< 0.01
SrO	0.08	0.04	0.007
BaO	0.03	0.01	0.0006
R.I.	1.585	1.620	
Molecular Norms –			
Quartz	1.9	----	----
Orthoclase	14.2	3.2	0.1
Albite	27.8	12.0	1.8
Anorthite	25.4	20.1	6.4
Wollastonite	4.6	16.9	35.8
Enstatite + Ferrosilite	19.7	31.5	41.3
Forsterite + Fayalite	----	9.2	9.2
Ilmenite	1.3	1.0	0.5
Magnetite	5.1	6.1	4.9

1 – Plagioclase-rich basaltic andesite, 1,500 feet northeast of the upper campsite.
2 – Augite-rich basalt, from south spur of peak B.
3 – Peridotite from ultramafic belt north of Menard Creek, 4 miles northeast of the map-area.

Analysis by P. R. Ralph, Analytical Laboratory, British Columbia Department of Mines and Petroleum Resources.

IGNEOUS INTRUSIONS: In addition to the large granitic intrusion in the northeast part of the map-area, a few smaller stocks and numerous dykes cut the Takla beds. All of these bodies are referred to as Omineca intrusions and are thought to be mainly Jurassic age.

The main plutonic body is a grey, fine to medium-grained granodiorite-diorite pluton exposed on the east spurs of peaks A and C. Petrographic analyses of fresh samples indicate a composition of mostly tabular plagioclase and subhedral quartz with interstitial orthoclase, some euhedral prisms of hornblende, a few chloritized biotite books, and scattered accessories such as magnetite, sphene, and apatite.

Other related bodies are found in diverse parts of the map-area. A small boss of diorite somewhat less siliceous and more equigranular than the main pluton is exposed beside the trail 2,000 feet south of peak B.

Also two small granodiorite stocks in the south part of the property cut both Takla and what is believed to be older Paleozoic rocks. The main intrusive phase is slightly porphyritic with scattered rectangular plagioclase phenocrysts, about 5 millimetres long, suspended in a hypidiomorphic granular groundmass which is composed of plagioclase and abundant orthoclase and quartz. Accessory biotite, hornblende, and magnetite are scattered throughout the rock.

Dykes are numerous and diverse in texture and composition. Perhaps the most common and largest are quartz feldspar porphyries. Many of these are granitic and were apparently derived from highly differentiated phases of the nearby Omineca stocks.

Modal analyses of representative samples of the main intrusions are given in the accompanying table.

MODAL COMPOSITIONS OF OMINECA INTRUSIONS

	A	B	C
	per cent	per cent	per cent
Quartz	7	20	23
Orthoclase	4	5	22
Plagioclase	68	55	44
Biotite	3	7	3
Hornblende	13	10	6
Sphene	1	Tr.	----
Magnetite	3	3	2
Apatite	1	Tr.	Tr.

A – A small diorite body 2,000 feet south of peak B; plagioclase zoned An_{20} to An_{45}.
B – Contact tonalite phase of the main Omineca intrusion 2,000 feet east of peak A.
C – Granodiorite stock 2,500 feet south of E.

STRUCTURE: Faulting is the dominant structural feature. The Sustut beds in the northwest part of the map-area have been displaced downward relative to the Takla feldspar porphyries which in turn, although stratigraphically higher, are structurally lower than the augite porphyries further northeast. Important normal faulting has evidently taken place on the strong southeasterly trending faults which traverse the area.

The statistical orientation of joints and cleavages agrees generally with the direction of the lineaments and main faults (Fig. 43). There are three important fracture modes, a strong attitude striking 072 degrees dipping 88 degrees northwest and two weaker directions striking 015 degrees dipping 85 degrees northwest and striking 155 degrees dipping 83 degrees southwest. The latter mode is parallel to the main direction of faulting; the strong easterly striking fractures are correlated with shears, minor cross-faults, and veins; the northeasterly trending fractures are not known to coincide with any important features except perhaps a lineament crossing the saddle between peaks B and C.

MINERALIZATION: Mineralization on the claims is of three types: copper sulphides occurring in (1) fissures and (2) disseminations in the volcanic rocks, and (3) disseminations near the contact of igneous intrusions.

The most significant mineralization appears to be that in the fissures. The most important of these was described by Lord (1948, p. 61). This is a northwest-trending silicified shear, 5 feet wide, just east of the crest of Marmot Ridge. The shear contains notable amounts of chalcopyrite, malachite, and limonite; a grab sample taken by Lord assayed: gold, 0.13 ounce per ton; silver, 3.59 ounces per ton; and copper, 5.18 per cent.

Similarly mineralized fissures have been uncovered in the area according to company reports. Assays on these average: copper, 1.5 to 3 per cent; gold, 0.02 to 0.05 ounce per ton; and silver, 0.3 to 3.0 ounces per ton. Although it is claimed that this type of mineralization is traceable for lengths of as much as 300 feet, there is doubt expressed concerning the continuity of metal grades.

The most widespread type of mineralization is the dispersal of copper sulphides in small cracks and replacements in the feldspathic basaltic andesite unit of the Takla (Plate XIX). The southwest slope of Marmot Ridge has many such occurrences. Chalcocite and bornite, the most common sulphides, are found with quartz and calcite as fillings together with epidote which is also a replacement mineral. Small high-grade showings are not uncommon in this association, however, the continuity of such mineralization over any important widths is questionable.

The third type of occurrence seems to be of little importance since pyrite is the only sulphide present in abundance. The best examples in this category are the west contact of the large intrusion east of peak A and the north contact of the small stock in the south part of the map-area. In both cases, pyrite is dispersed through the hornfelsic rocks for 10 to 20 feet outward from the margin of the intrusion. Some molybdenite has been reported in the small southern stock but this appears to be very minor.

GEOCHEMISTRY: The results of an extensive geochemical survey shows that soils overlying the feldspathic Takla volcanic rocks are generally enriched in copper (Fig. 41). According to company data background levels are in the range 50 to 150 ppm; anomalous zones range to 1,200 ppm copper. Except for a number of high copper values in the vicinity of a small easterly trending vein near peak F, anomalies in areas underlain by augite porphyry basalt are usually only slightly above background.

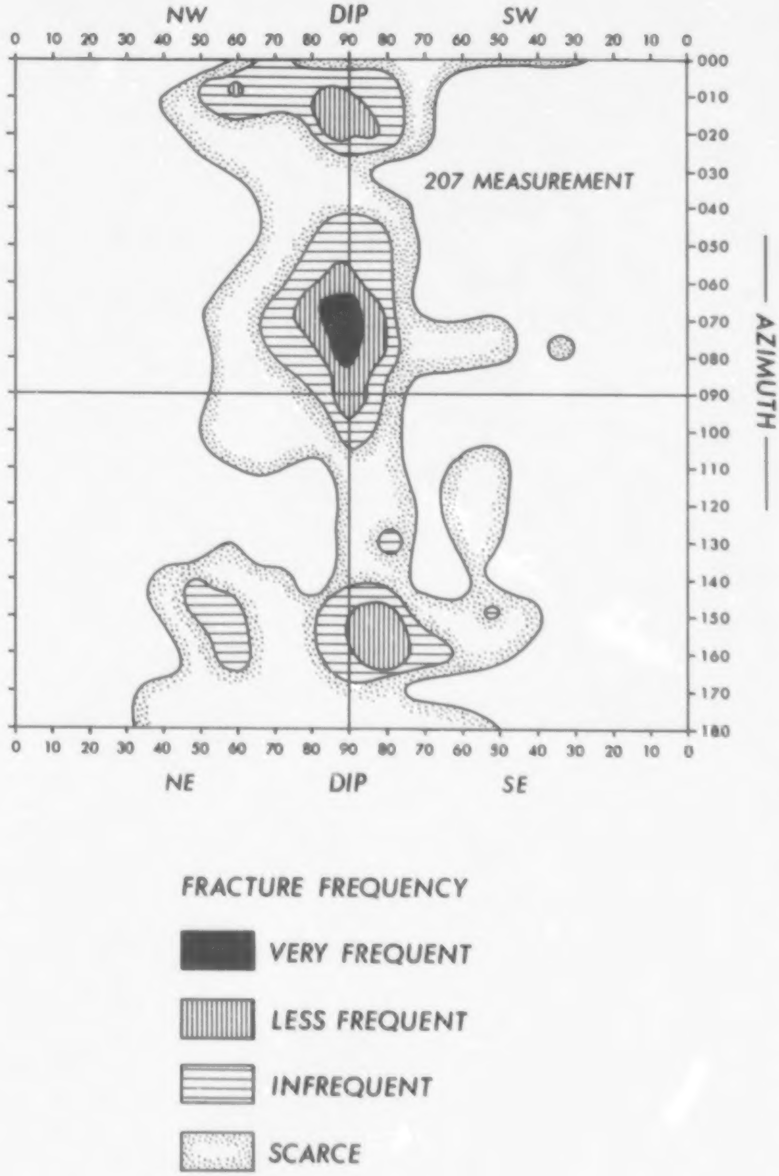


Figure 43. Fracture orientation, Menard Creek area.

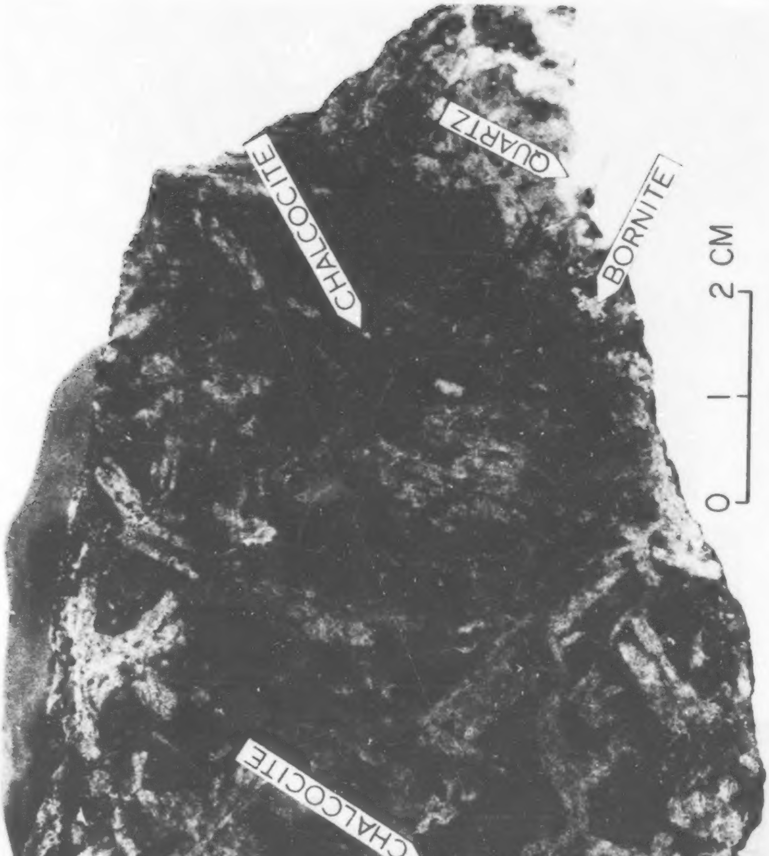

CHALCOCITE
QUARTZ
BORNITE
CHALCOCITE
0
1
2 CM

Plate XIX. Marmot prospect, blebs of chalcocite and a bornite-quartz vein in feldspathic basaltic andesite.

Other anomalies were detected near contacts of igneous intrusions and in the vicinity of fissures. The strongest of these are aligned roughly parallel to the main fissure direction striking northwesterly and some easterly striking cross-fractures.

WORK DONE: EM and airborne magnetometer survey, 188 line-miles covering all claims; surface diamond drilling, five holes totalling 900 feet on Marmot 35, 69, 70, and 140.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1966, p. 82; 1967, p. 89; 1968, p. 119; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 104; *Geol. Surv., Canada*, 1948, Mem. 251; Assessment Reports 991, 2349, 4254.

D (Fig. E, No. 56)

LOCATION: Lat. 56° 37' Long. 126° 35' (94D/10E)
OMINECA M.D. Three miles due north of Sustut Peak.

CLAIMS: D 1 to 80, EVE 1 to 18, EVE 19 Fraction.

OWNERS: Kalco Valley Mines Ltd. and Brascan Resources Limited.

OPERATOR: BRASCAN RESOURCES LIMITED, 502, 1155 West Pender Street, Vancouver V6E 2P4.

METALS: Copper, molybdenum.

DESCRIPTION: The country rocks includes Takla Group volcanic rocks and Asitka Group banded cherts, limestone, and felsic volcanic rocks. Some mineralized float was located in till, but none in place.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; topographic mapping, 8 square miles; linecutting and magnetometer survey, 32 line-miles; geochemical survey, 1,854 soil samples taken mostly at 100 by 800-foot grid spacing and 40 silt samples taken at irregular intervals covering all claims.

REFERENCE: Assessment Report 4883.

E (Fig. E, No. 97)

LOCATION: Lat. 56° 39' Long. 126° 34' (94D/10E)
OMINECA M.D. Straddling the Sustut River, 1.5 miles southwest of the Moosevale Creek junction.

CLAIMS: E 1 to 64.

OWNERS: J. McLeod and J. Forster.

OPERATOR: BENSON MINES LTD., c/o 306, 845 West Pender Street, Vancouver.

DESCRIPTION: Paleozoic marble-cobble conglomerate and volcanic sandstone are exposed along a 2,700-foot section of the Sustut River and for 2,000 feet up a small tributary.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet; linecutting, 18 miles of grid; geochemical survey, 464 soil and silt samples taken at 200 by 750-foot grid spacing covering E 1-28 amd 41-50.

REFERENCE: Assessment Report 4824.

ROY (94D-78) (Fig. E, No. 38)

LOCATION: Lat. 56° 32′ Long. 126° 44′ (94D/10)
OMINECA M.D. Sustut area, 8 miles southwest of Sustut Peak, between 3,500 and 5,500 feet elevation.

CLAIMS: ROY 1 to 76, 81 to 96, 101 to 118, 121 to 138, 141 to 252.

OWNER: McINTYRE PORCUPINE MINES LIMITED, 1003, 409 Granville Street, Vancouver.

METALS: Copper, gold, zinc (?).

DESCRIPTION: The claims are underlain by porphyry and stratabound copper mineralization which occurs in Takla Group pyroclastic units.

WORK DONE: Surface geological mapping, 1 inch equals 2,640 feet and 1 inch equals 1,320 feet covering 17 square miles and 1 inch equals 100 feet covering a mineralized showing; geochemical survey, approximately 1,200 soil and silt samples taken at varying intervals covering most of the claims; trenching, 105 feet on Roy 153 and 154.

REFERENCE: Assessment Report 4595.

NO. 1, NO. 2, A (Fig. E, No. 36)

LOCATION: Lat. 56° 35′ Long. 126° 45′ (94D/10)
OMINECA M.D. Six miles west of Sustut Peak on a major southwest flowing tributary of Two Lake Creek.

CLAIMS: NO. 1 – 1 to 20, NO. 2 – 1 to 20, A 1 to 64, FRACTIONS 1 to 5.

OWNERS: Consolidated Standard Mines Limited and Yukon Gold Placers, Limited.

OPERATOR: YUKON GOLD PLACERS, LIMITED, 835, 555 Burrard Street, Vancouver.

METALS: Copper, silver.

DESCRIPTION: Fine-grained chalcocite with some bornite and chalcopyrite occurs in the upper part of the Lower Takla Group volcanic rocks close to its contact with Upper Takla units.

WORK DONE: Claims and topography mapped; surface geological mapping, 1 inch equals 1,000 feet; linecutting, 18 miles of grid; geochemical survey, 212 silt samples taken at 200-foot intervals and 14 soil and 10 rock samples taken covering all claims; surface diamond drilling, two holes totalling 1,000 feet on NO. 2 – 5 and 20.

REFERENCE: Assessment Report 4625.

B (94D-81) (Fig. E, No. 57)

LOCATION: Lat. 56° 38′ Long. 126° 45′ (94D/10)
OMINECA M.D. At the headwaters of Moosevale Creek, 6.5 miles west-northwest of Sustut Peak, at approximately 4,000 feet elevation.

CLAIMS: B 1 to 36.

OWNER: Bow River Resources Ltd.

OPERATOR: BRASCAN RESOURCES LIMITED, 502, 1155 West Pender Street, Vancouver V6E 2P4.

(94D/10W)

METALS: Copper, silver.

DESCRIPTION: Takla Group volcanic rocks consisting mainly of an ash flow unit and a volcaniclastic unit contain chalcopyrite, bornite, and chalcocite which occur along fractures, as disseminations, and as veins in shear zones.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; linecutting and magnetometer survey, 19 line-miles; geochemical survey, 970 soil samples taken at 100 by 800-foot grid spacing and 49 silt samples taken at irregular intervals; topographic mapping, 3 square miles covering all claims.

REFERENCE: Assessment Report 4882.

BIRCH (94D-77) (Fig. E, No. 12)

LOCATION: Lat. 56° 31' Long. 126° 49' (94D/10W)
OMINECA M.D. Four and one-half miles north of the junction of Red Creek and the Sustut River, at approximately 5,000 feet elevation.

CLAIMS: BIRD 2, 4, 6, 35 to 48, 67 to 76, 95 to 107.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METALS: Copper, lead, zinc.

DESCRIPTION: The area is underlain by andesite and andesitic tuff. Pyrite, minor chalcopyrite, sphalerite, and galena have been observed.

WORK DONE: VLF EM and magnetometer survey, 1.8 line-miles and SP survey, 1.7 line-miles covering Bird 36-40; geochemical soil survey, 170 samples taken at 100 by 100 by 200-foot grid spacing covering Bird 102-107; trenching, 120 feet on Bird 36.

REFERENCES: Assessment Reports 4785, 4787.

BEST, MAR (Fig. E, No. 35)

LOCATION: Lat. 56° 33' Long. 126° 48' (94D/10W)
OMINECA M.D. Eight miles southwest of Sustut Peak, at approximately 4,000 feet elevation.

CLAIMS: BEST 1 to 20, 35 to 52, MAR 13 to 34.

OWNER: BOW RIVER RESOURCES LTD., 333, 885 Dunsmuir Street, Vancouver.

DESCRIPTION: The area is underlain by a sequence of tuff and agglomerate units. Copper stain has been observed in narrow shear zones in these units.

WORK DONE: Geochemical silt survey, 24 samples.

GRIZZLY-ORK (94D-83) (Fig. E, No. 55)

LOCATION: Lat. 56° 34' Long. 126° 52' (94D/10W)
OMINECA M.D. Three miles south of Two Lake Creek, near the northernmost headwaters of Red Creek, at approximately 5,500 feet elevation.

CLAIMS: MAC 3 to 10, 62 to 64, 121 to 124, 181 to 192. GRIZZLY 1 to 4, BIRD 62, 64, 66, 89, 91, 93, 94, 125, 126.

(94D/10W)

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METAL: Copper.

DESCRIPTION: Country rocks include Hazelton Group tuff and agglomerate units cut by porphyry dykes. Mineralization consists of disseminated bornite and chalcopyrite.

WORK DONE: Surface diamond drilling, six holes totalling 156.5 feet on Grizzly 1, 2 and Mac 183, 185; trenching, 405 feet on Mac 185.

CARLOS, PIKE (94D-88) (Fig. E, No. 58)

LOCATION: Lat. 56° 36' Long. 126° 48' (94D/10W)
OMINECA M.D. Approximately 12 miles west of Sustut Lake.

CLAIMS: CARLOS 51 to 80, FIRE 1 to 16, PIKE 29 to 50.

OWNERS: HIGHHAWK MINES LIMITED and SPROAT SILVER MINES LTD., 333, 885 Dunsmuir Street, Vancouver.

METAL: Copper.

DESCRIPTION: Takla tuffs and agglomerates contain a thin flow of amygdaloidal andesite. They are cut by numerous thin andesite dykes and are disrupted by block faulting. Chalcocite and native copper occur in the flow amygdules, and chalcocite and minor bornite occur in calcite-epidote veins along the faults.

WORK DONE: Surface geological mapping, 1 inch equals 880 feet; geochemical survey, 20 silt and 13 rock samples taken covering Carlos 51-80, Fire 1-12, and Pike 29-50.

REFERENCE: Assessment Report 4780.

DD (94D-24) (Fig. E, No. 99)

LOCATION: Lat. 56° 42' Long. 126° 58' (94D/10W)
OMINECA M.D. Two Lake Creek, Sustut Peak area.

CLAIMS: DD 1 to 20.

OWNER: G. Stapley.

OPERATOR: INLAND COPPER LTD., 215, 470 Granville Street, Vancouver.

METALS: Copper, silver.

DESCRIPTION: According to mapping by Lord (1948, Mem. 251), the area is underlain by Upper Takla volcanic rocks.

WORK DONE: Linecutting, 3.6 miles of grid covering DD 5-9.

REFERENCES: *Geol. Surv., Canada,* Mem. 251, p. 61; Assessment Report 4856.

BARN, BEAR (94D-84) (Fig. E, No. 53)

LOCATION: Lat. 56° 41' Long. 126° 49' (94D/10)
OMINECA M.D. Sustut Peak area, 22 miles west-northwest of Johanson Lake, 2.5 miles east-southeast of Dewar Peak.

CLAIMS: BARN 1 to 42, BEAR 1 to 16, ICE 1 to 3, NIVEN 1 to 48, PIKE 1 to 22, SNO 1 to 24.

(94D/15E, 16W)

OWNERS: M. Bratlien and T. H. Cross.

OPERATOR: DORITA SILVER MINES LTD., 808, 602 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Takla Group flows, agglomerates, tuffs, limestone, argillite, gneiss, and conglomerate underlie most of the claims, and are in fault contact with the Asitka Group to the northeast. The Takla rocks have been disrupted by block faulting and intruded by dykes of quartz-feldspar porphyry. Malachite, chalcopyrite, minor chalcocite, and traces of bornite occur in quartz and calcite veinlets along faults or shear zones and adjacent to porphyry dykes.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet; geochemical soil and silt survey, 526 samples taken on a small grid in the southeast, along contours and along streams.

REFERENCE: Assessment Report 4710.

DWG COPPER (94D-91) (Fig. E. No. 20)

By B. N. Church

LOCATION: Lat. 56° 53′ Long. 126° 29′ (94D/15E, 16W)
OMINECA M.D. On McConnell Creek, 1.5 miles south of McConnell Lake, at approximately 4,000 feet elevation.

CLAIMS: DWG COPPER 1 to 46 (replacing BEN claims).

OWNER: BEN GINTER, Prince George.

METAL: Copper.

DESCRIPTION:

INTRODUCTION: This report is based on a detailed survey of the property by the writer in June 1973 and private engineer's evaluation prepared for Mr. Ginter.

Traditionally this remote area has been known for the occurrence of gold. Placers were discovered here in 1899 and have been worked sporadically on a small scale since that time. A minor occurrence of gold was found and staked in 1947 (the Gerle Gold claims) 2 miles east of the south end of McConnell Lake.

Copper mineralization was not discovered until 1966. At this time prospectors Messrs. Delma Dionne and France Wietzel, employed by Mr. Ben Ginter of Prince George, found chalcopyrite veins in the bedrocks on the banks of McConnell Creek 1.5 miles southeast of McConnell Lake.

PHYSIOGRAPHY AND GLACIAL HISTORY: The McConnell Creek copper prospect is located in the Omineca Mountain physiographic subdivision of north central British Columbia near the Finlay-Ingenika drainage divide (Fig. 44). The area is characterized by modest topographic relief and gentle mountain slopes. The elevation of McConnell Creek, where it flows across the property, is 4,050 feet above mean sea level; the survey cairn on the summit of Snowslide Mountain, 1.6 miles to the northeast, stands at an elevation of 6,078 feet.

McConnell Valley is a conspicuous lineament about 10 miles long extending northwest from the Ingenika River to the area just south of Fredrikson Lake. Typically the valley is straight and trench-like with a flat floor 1,000 to 2,000 feet wide and steep rock walls rising 200 to 300 feet on both sides. Near the mid-point of the valley, Snowslide Creek enters from a deep gorge eroded in the east wall. At the time of visit in June 1973, the

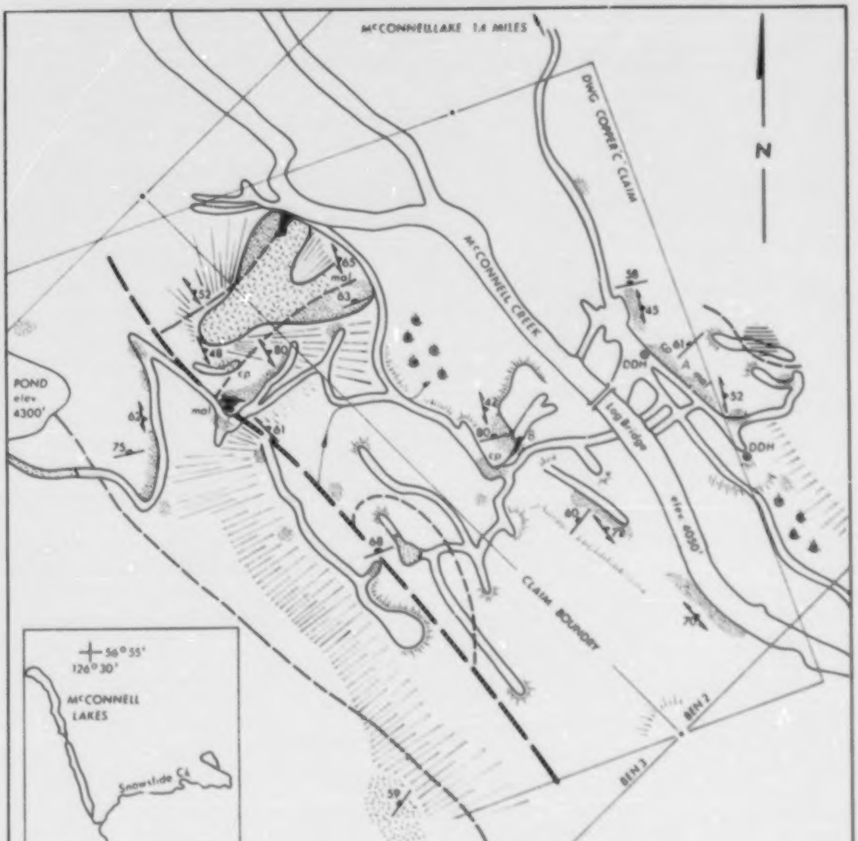

McCONNELL LAKE 1.4 MILES
N
DWG COPPER 'C' CLAIM
McCONNELL CREEK
POND
elev. 4300'
Log Bridge
elev. 4050'
CLAIM BOUNDRY
BEN 2
BEN 3
DDH
DDH
mal
cp
A
B
D
E
65
52
63
48
80
62
75
61
68
59
58
45
61
52
62
80
78
80
75
70
80
52
83
56° 55'
126° 30'
McCONNELL LAKES
Snowslide Ck
Glacier Ck
SNOWSLIDE MTN.
MAP AREA
INDEX MAP
LEGEND
GRANODIORITE
GABBRO
SCHIST
DYKE
SULPHIDES
SYMBOLS
DIAMOND DRILL HOLE
GEOLOGICAL CONTACT
SULPHIDE SHOWING
CHALCOPYRITE
cp
EMBANKMENT
TRENCH, ROAD
CLAIM POST
MALACHITE
mal
MUSKEG
STREAM
FAULT
JOINT
SHEAR
0
300
FEET
0
100
METRES

Figure 44. Geology of the DWG Copper claims, McConnell Creek.

water from this stream split at the apex of an alluvial fan — half flowing into McConnell Lake 1,000 feet to the north and eventually toward the Finlay River, the other half forming the headwaters of McConnell Creek feeding into the Ingenika River 5.5 miles to the southeast.

McConnell Valley was intensely glaciated during the Pleistocene epoch and the upper slopes are incised by numerous meltwater channels. These water courses developed along the margins of a receding valley glacier. The upper section of Caribou Creek presently follows such a route.

Final retreat of glacial ice left McConnell Valley strewn with moraine deposits, eskers, and kame terraces such as presently displayed along Attichika Valley, a continuation of McConnell Valley to the northwest. In McConnell Valley this material was eroded and reworked by McConnell Creek which once discharged much larger volumes of water to the Ingenika than at present. The well-developed benches which presently flank this creek are remnants of gravel beds deposited by the stream earlier in its history. These are characterized by boulder tops with local sandy infillings and streaks rich in black magnetic sands and some placer gold.

GEOLOGICAL SETTING: The McConnell Creek area is underlain by an assemblage of plutonic intrusions and severely metamorphosed rocks of probable sedimentary or volcanic origin. According to Lord (1948) the intrusions are outliers of the Jurassic Omineca batholith and the adjacent country rocks are part of the Takla Group.

The ridge forming the crest of Snowslide Mountain, about 2 miles east of the valley, consists of a northwesterly striking band of amphibolitic gneiss, which appears to be a roof pendant or septa of country rock in a large granodiorite body. The gneiss is commonly medium grained with conspicuous hornblende segregations interlayered with feldspathic bands. The gneissocity is vertical or steeply inclined to the northeast and has an average strike of about 155 degrees.

A somewhat more diversified assemblage of country rock is exposed along the lower course of Caribou Creek and on the east wall of McConnell Valley. In this area amphibolitic gneiss, chloritic schist, and some units recognizable as metavolcanic rocks are intermixed.

To the west, good exposures are restricted more or less to the steep valley walls. The most common rock is impure granodiorite. In places this is epidotized, pyritiferous, and badly sheared.

The freshest rock in the area is pink biotite granite which intrudes the granodiorite. This body, itself cut by a number of basalt dykes, is exposed in the upper part of the canyon of Glacial Creek one-half mile upstream from McConnell Creek.

In the immediate vicinity of the McConnell Creek copper prospect, two main intrusions are distinguished, a sheared granodiorite and a quartz gabbro.

In hand specimen the granodiorite is generally schistose, having a waxy or greasy appearance with individual minerals smeared and often difficult to identify. However, detailed microscopic examination of a fresh sample shows the following mineralogy:

	Per Cent
Quartz	26
Orthoclase	7
Plagioclase (An$_{20}$ to$_{40}$)	62
Biotite	4
Chlorite	
Epidote	
Magnetite	1
Sphene	
Calcite	Trace

The rock is crowded with zoned, subhedral plagioclase crystals, 2 to 4 millimetres in diameter, and slightly smaller quartz grains which generally mass together, forming somewhat elongated quartz eyes. Orthoclase is scattered sparingly throughout the rock as large poikilitic individuals amoeboid in outlined. The accessories, chloritized biotite, magnetite, and sphene, are interstitial.

The quartz gabbro is found only at a few points near the mineral showings, the main body lying to the south exposed almost continuously for at least 2 miles on the west wall of the valley. Normally the rock is fresh except for the presence of minor pyrite and some epidotization adjacent pegmatite and aplite dykelets. Hand specimens are normally mesocratic with numerous dark amphibole crystals and crystal clusters suspended in a light-coloured, plagioclase-rich matrix. The following mode has been determined by a thin section point count:

	Per Cent
Quartz	11
Orthoclase	7
Plagioclase (An$_{40}$ to$_{45}$)	55
Hornblende	24
Chlorite	4
Magnetite	
Sphene	
Apatite	
Calcite	Trace

The plagioclase is commonly subhedral and lath-shaped, 2 to 3 millimetres long, arranged more or less in a random fashion with quartz and orthoclase fitted between these larger crystals. Hornblende often exhibits sharp straight contacts with adjoining feldspar crystals but is otherwise ragged in outline and charged with poikilitic inclusions of quartz, magnetite, and apatite.

The intrusive relationship between the granodiorite and quartz gabbro are obscured by poor exposure and alteration due to shearing. In places, however, pegmatite pervades the gabbro and appears to emanate from the granodiorite.

The chemistry of the granodiorite and quartz gabbro calculated from the mineralogy compares favourably with the actual chemical analyses of these rocks as well as Daly's (1933) average compositions, as seen in the accompanying table.

TABLE OF CHEMICAL ANALYSES

	1	2	3	4	5	6
SiO_2	69.87	69.3	65.69	57.96	53.0	55.42
TiO_2	0.28	0.5	0.57	0.75	1.3	1.31
Al_2O_3	16.72	17.0	16.11	17.14	17.2	17.04
Fe_2O_3	0.87	0.9	1.76	4.27	7.9	2.54
FeO	1.17	0.7	2.68	4.23	8.1	7.28
MnO	0.06	----	0.07	0.19	----	0.21
MgO	0.82	1.1	1.93	2.96	2.3	4.22
CaO	3.37	3.8	4.47	7.15	5.7	6.80
Na_2O	5.62	5.1	3.74	3.92	3.6	3.21
K_2O	1.22	1.5	2.78	1.43	0.9	1.61
P_2O_5	----	----	0.20	----	----	0.36
	100.00	100.00	100.00	100.00	100.00	100.00

1 – Granodiorite sample, 200 feet southeast of B showing, McConnell Creek copper prospect; analysis by W. M. Johnson, Analytical Laboratory, British Columbia Department of Mines and Petroleum Resources.

2 – Granodiorite, same as No. 1; composition calculated from mineralogy.

3 – Daly's 1933 average granodiorite, Table 1, No. 45.

4 – Quartz gabbro sample, about 300 feet northeast of C showing near McConnell Creek; analysis by W. M. Johnson, Analytical Laboratory, British Columbia Department of Mines and Petroleum Resources.

5 – Quartz gabbro, same as No. 4; composition calculated from mineralogy.

6 – Daly's 1933 average quartz gabbro, Table 1, No. 63.

FRACTURES: The results of a statistical study of fractures in the intrusive rocks in the vicinity of the prospect are illustrated on Figure 45. The main direction of fracturing strikes 160 degrees and dips 60 degrees northeast; this is subparallel to known shearing and coincident with the overall strike of McConnell Valley. Several sets of cross-fractures are weakly developed. These have the following mean attitudes: 070 degrees – 65 degrees northwest; 040 degrees – 65 degrees northwest; and 020 degrees – 90 degrees. It is clear that the cross-fractures carry most of the mineralization.

MINERALIZATION: The McConnell Creek copper prospect comprises five sulphide showings exposed within a radius of several hundred feet near the banks of McConnell Creek (Fig. 44).

The showing designated A is a 150-foot-long cut in sheared granodiorite trending southeast about 100 feet east of McConnell Creek. At the time of visit the base of the cut was obscured by rubble, however, the face above was clean and displayed a number of thin northeasterly striking chalcopyrite-pyrite seams. According to a private report, six 10-foot-wide samples taken along the face averaged 0.02 per cent copper, three samples of similar width averaged less than 0.01 per cent copper, and one sample gave 0.94 per cent copper. Two other samples, each taken across 5 feet, assayed 0.17 and 2.40 per cent copper.

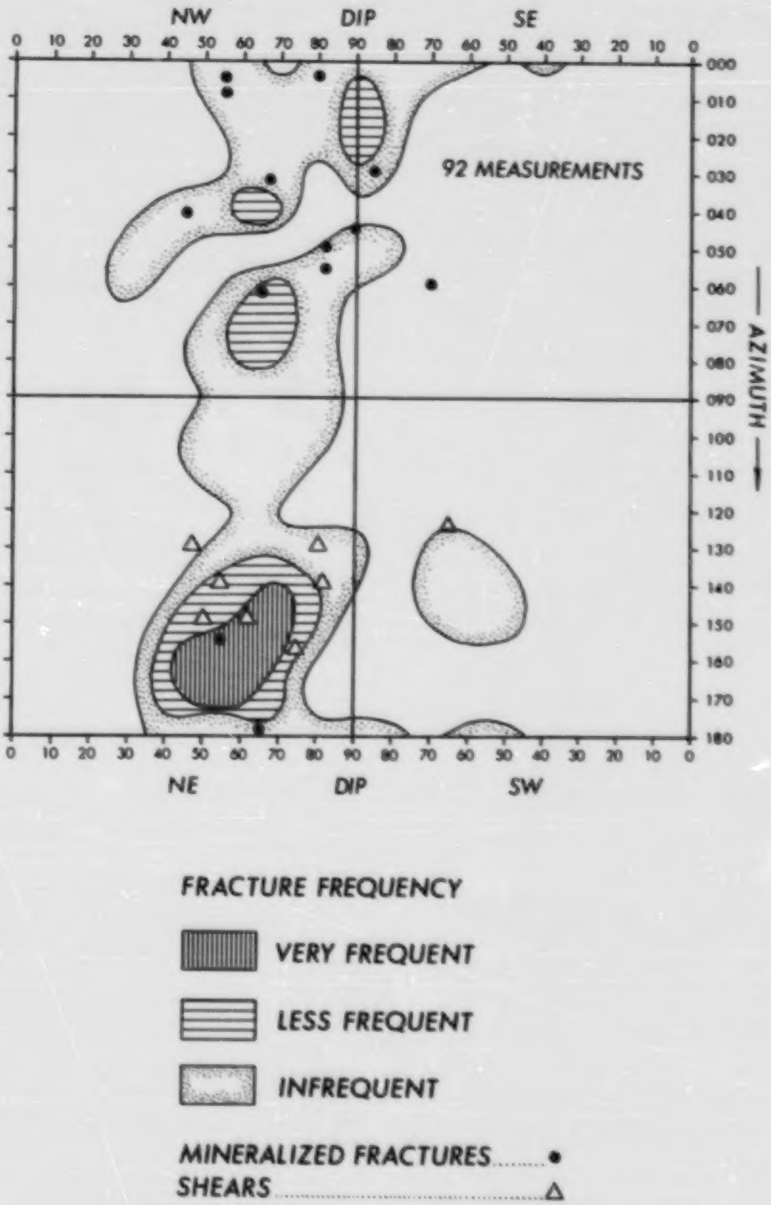


Figure 45. Fracture orientation, McConnell Creek area.

The most important showing, designated B on the accompanying map, is centred approximately 150 feet southwest of McConnell Creek opposite A. This is a quartz - pyrite - chalcopyrite vein exposed for a length of about 50 feet, having variable strike and thickness (Plate XX). The southwest extremity of the vein striking 068 degrees is about 4 feet wide and heavily mineralized; to the northeast the attitude changes to 062 degrees – 65 degrees northwest, the total mineralized zone widening considerably. A chip sample across 15 feet taken by the writer across the splayed northeast extremity of the vein assayed: copper, 1.44 per cent; silver, 0.2 ounce per ton; molybdenum, 150 ppm; and gold, lead, and zinc, trace. A more detailed sampling of the same vein by others reportedly gave the following assay results: six samples across 5 feet averaging copper, 0.70 per cent; one sample across 3 feet – copper, 6.60 per cent and silver, 4.55 ounces per ton; one sample across 10 feet – copper, 7.60 per cent; silver, 2.92 ounces per ton; and gold, 0.082 ounce per ton; and one sample across 11 feet – copper, 5.60 per cent; silver, 1.69 ounces per ton; and gold, 0.021 ounce per ton.

Showing C is 500 feet west of B and 100 feet above the creek in a small draw that separates a rocky spur from the main wall of the valley. The exposure consists of several feet of crushed malachite-stained granodiorite and fault gouge protruding from a gravel and talus embankment. According to report, a detailed sample 5 feet wide taken across the zone assayed: copper, 0.64 per cent. A grab sample obtained by the writer assayed: copper, 1.15 per cent and gold and silver, trace.

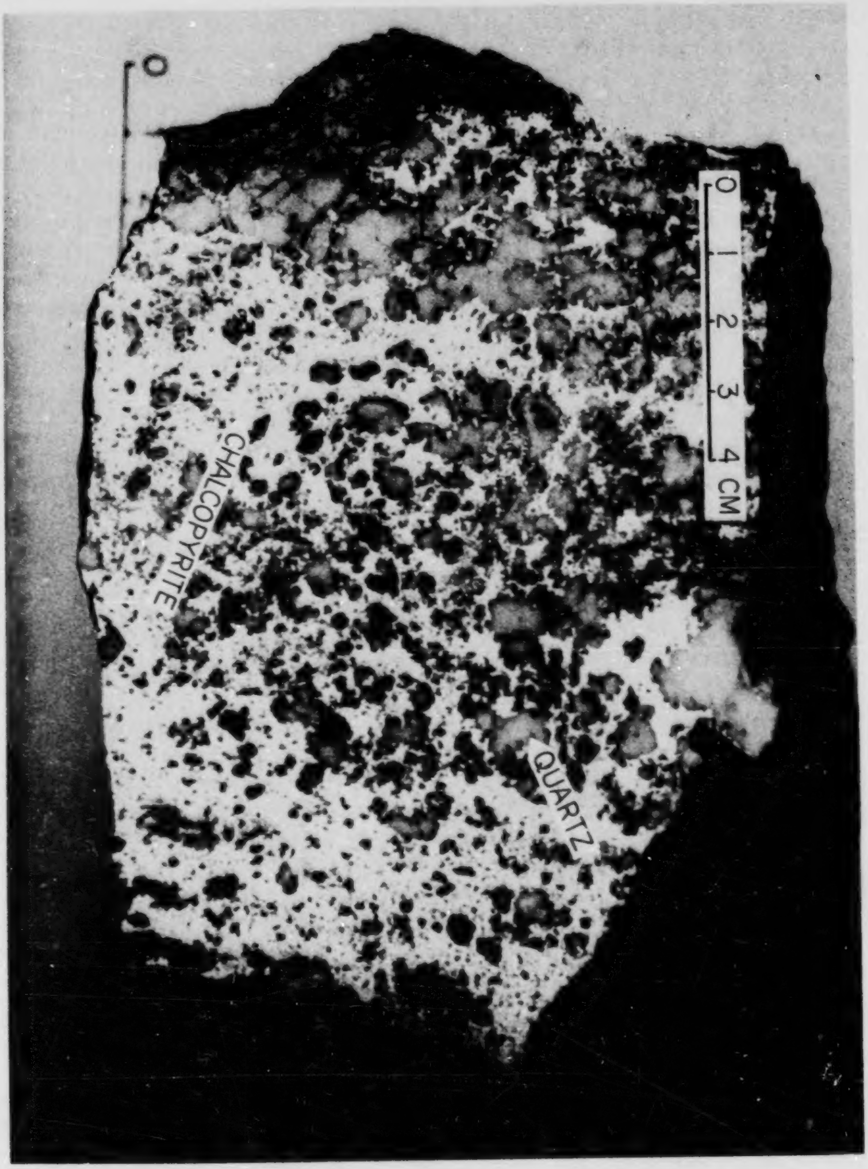
The rocky spur immediately north of C is slightly mineralized with scattered pyrite and chalcopyrite in quartz stringers. These stringers are visible in small gossan zones at the top of the spur and again near the base of outcrop on the west bank of McConnell Creek.

The mineral showings designated D and E, centred about 1,300 feet south of C, display no evidence of previous prospecting. These consist of pyrite, chalcopyrite-bearing quartz veins exposed on the granite slopes of a gulch tributary to the main valley. Showing D, situated near the top of the north slope of the gulch, comprises three northeast-striking veins – a central vein of mostly rusted quartz, about 10 inches wide flanked 30 feet to the northwest by a 12-inch-wide malachite and rust-stained quartz vein and 5 feet to the southeast by a chalcopyrite-rich vein 5 inches wide. The average attitude of these veins was determined to be 055 degrees – 80 degrees northwest. A well-mineralized composite grab sample taken by the writer assayed: copper, 10.43 per cent; gold, 0.01 ounce per ton; silver, 1.3 ounces per ton; and lead, zinc, and molybdenum, less than 0.005 per cent.

Showing E, an apparent continuation of the vein system, is located a few hundred feet southwest of D. Three chalcopyrite-rich veins are again identified; these are subparallel striking 050 degrees – 85 degrees northwest and spaced about 6 feet apart. The widths are variable ranging up to 4 inches, 12 inches, and 10 inches, respectively, measured on the northwest, central, and southeast veins.

It is interesting to note that a red liverwort-like organism found in abundance on showing E is widely used by prospectors in this region as a guide to copper mineralization. This has been tentatively identified as *Trentopholia iolithus* (L.) which is also known to occur in the Stikine area.

Although the plant certainly seems to demonstrate a remarkable affinity for copper minerals, it does survive with perhaps somewhat less success on some of the local apparently unmineralized basaltic rocks.



0
1
2
3
4 CM
CHALCOPYRITE
QUARTZ

Plate XX. DWG Copper, McConnell Creek, chalopyrite-quartz vein, 'B' showing.

In summary, it is evident that the main pulse of mineralization followed a period of intense shearing along McConnell Valley with cupiferous solutions entering a scatter of northeasterly striking cross-fractures. In the vicinity of showings A and C, the mineralization tends to be dispersed in small veinlets and disseminations whereas at B, D, and E the sulphides and quartz fillings are concentrated in well-defined veins.

The rough alignment of A, B, D, and E, subparallel to the prevailing cross-fractures, suggest that these showings are on or near the main zone of mineral enrichment. It is, therefore, suggested that any future prospecting should focus on the area between these showings.

WORK DONE: Work completed to date includes approximately 6,000 feet of bulldozer trenching and two diamond-drill holes totalling a depth of about 300 feet.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1947, pp. 109, 110; 1961, pp. 128, 129; *Geol. Surv., Canada,* 1948, Mem. 251.

BOW (Fig. E, No. 49)

LOCATION: Lat. 56° 46' Long. 126° 22' (94D/16W)
OMINECA M.D. Twelve miles northerly of Sustut Lake, 4 miles west of Fleet Peak.

CLAIMS: BOW 1 to 8.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby V5G 1H4.

DESCRIPTION: Andesite and rhyolite country rocks have been cut by a small gossan-stained quartz feldspar porphyry body which contains 1 to 5 per cent disseminated pyrite.

WORK DONE: Linecutting and magnetometer survey, 7 line-miles and geochemical soil survey, 184 samples taken at 200 by 400 and 800-foot grid spacing covering all claims.

REFERENCE: Assessment Report 4739.

NIKOS (94D-85) (Fig. E, No. 50)

LOCATION: Lat. 56° 47' Long. 126° 26' (94D/16W)
OMINECA M.D. Straddles the Ingenika River about 1 mile above the mouth of McConnell Creek.

CLAIMS: NIKOS 1 to 36.

OWNER: UTAH MINES LTD., 412, 510 West Hastings Street, Vancouver V6B 1L9.

METAL: Copper.

DESCRIPTION: The area is underlain by Mesozoic volcanic rocks intruded by Jurassic intrusive rocks.

WORK DONE: Reconnaissance surface geological mapping, 1 inch equals one-half mile; reconnaissance magnetometer survey, 4 line-miles; and reconnaissance geochemical survey, 100 soil samples and 10 silt samples, 5 line-miles covering all claims.

TOODOGGONE RIVER 94E

PINE (Fig. E, No. 9)

LOCATION:	Lat. 57° 13' Long. 126° 43' (94E/2E) OMINECA M.D. Thirteen miles northeast of Thutade Lake, at the headwaters of the Finlay River.
CLAIMS:	PINE 13 to 18, 31 to 46, 65, 67 to 80, 129, 131, PINE 135 to 142 Fractions.
OWNER:	KENNCO EXPLORATIONS, (WESTERN) LIMITED, 730 One Bentall Centre, Vancouver.
DESCRIPTION:	The survey area is underlain by intermediate Upper Triassic volcanic rocks which are intruded by syenites of the Omineca intrusions.
WORK DONE:	Airborne magnetic survey, 97 line-miles using one-eighth-mile line spacing and 350-foot terrain clearance; 23 line-miles are within the claim boundaries.
REFERENCES:	*B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 63, 64; Assessment Reports 1886, 2380, 3031, 3120, 3266, 4396.

RIGA (94E-3, 4) (Fig. E, No. 101)

LOCATION:	Lat. 57° 12' Long. 126° 55' (94E/2W) OMINECA M.D. Drybrough Peak, 9 miles north of Thutade Lake.
CLAIMS:	RN 1 to 36.
OWNER:	D. Reinke.
OPERATOR:	MINAS DE CERRO DORADO LTD., 107, 325 Howe Street, Vancouver.
METALS:	Copper, molybdenum, silver.
DESCRIPTION:	Takla volcanic rocks and intercalated limestone are irregularly intruded by syenite and monzonite of the Omineca intrusions. Pyrite is widespread in both volcanic and intrusive rocks. On RN 20 a small lobe of monzonite contains disseminated and fracture-filling chalcopyrite and blebs of molybdenite; the mineralization extends 20 feet into the volcanic rocks along fractures. On RN 24, 200 feet west of Drybrough Peak, volcanic rocks contain extensive malachite along fractures, accompanied by minor chalcopyrite and bornite. Minor malachite and chalcopyrite occur elsewhere in syenite dykes and in related fractures in volcanic rocks.
WORK DONE:	Linecutting, 12.5 miles of grid; surface geological mapping, 1 inch equals 400 feet; magnetometer survey, 4.5 line-miles; geochemical soil survey, 205 samples taken at 100 by 200-foot grid spacing covering RN 7-12, 14, 16, 24, 26-29.
REFERENCES:	*B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 63; Assessment Reports 1802, 2307, 4870.

BELL (94E-45) (Fig. E, No. 100)

LOCATION: Lat. 57° 14' Long. 127° 00' (94E/2W)
OMINECA M.D. Toodoggone River area, approximately 2.5 miles east of Black Lake.

CLAIMS: BELL 1 to 14, 17 to 34, 37 to 48.

OWNER: BELL MOLYBDENUM MINES LIMITED, 408, 470 Granville Street, Vancouver V6C 1V8.

METALS: Gold, silver, copper, lead.

DESCRIPTION: Two-thirds of the claim area is underlain by Toodoggone volcanic rocks of Lower Jurassic age which overlie basic Takla volcanic rocks. Granitic rocks of the Omineca intrusions cut Takla rocks. Geochemistry and reconnaissance geological mapping located two rusty weathering mineralized zones averaging 25 by 200 feet in size. Low silver, copper, lead, and zinc assays were obtained from rock chip samples.

WORK DONE: Surface geological mapping, 1 inch equals 600 feet; geochemical survey, 51 silt and soil samples and 35 rock chip samples covering Bell claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 63, 64.

SHAS (Fig. E, No. 86)

LOCATION: Lat. 57° 14' Long. 127° 05' (94E/2W, 3E, 6E, 7W)
OMINECA M.D. South of Toodoggone River, 2 miles northeast of Black Lake.

CLAIMS: SHAS 1 to 176.

OWNER: SHASTA MINES & OIL LTD., 3751 Bayride Avenue, West Vancouver.

METAL: Copper.

DESCRIPTION: Takla Group volcanic rocks and minor intercalated limestone underlie the eastern claims and are in fault contact with granodiorite and altered granodiorite of the Omineca plutons underlying the rest of the claims. Northwest-trending dykes of aplite, quartz monzonite, and porphyry cut the granodiorite, which shows potash metasomatism, biotite alteration, and propylitization, with minor mineralization, adjacent to dykes and fault contact. The mineralization consists of malachite coatings and minor bornite on fracture surfaces.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering 3 square miles; magnetometer survey, 31.5 line-miles; geochemical soil survey, 1,900 samples taken at 200 by 800-foot grid spacing covering all claims.

REFERENCE: Assessment Report 4570.

PUT, HUMP (94E-41) (Fig. E, No. 51)

LOCATION: Lat. 57° 28' Long. 127° 25' (94E/6W)
LIARD M.D. Four miles northwest of Metsantan Lake.

CLAIMS: PUT 1 to 38, HUMP 1 to 100.

OWNERS: C. J. Sullivan and T. Rodgers.

OPERATOR: SUMAC MINES LTD., 1200, 510 West Hastings Street, Vancouver.

METAL: Copper.

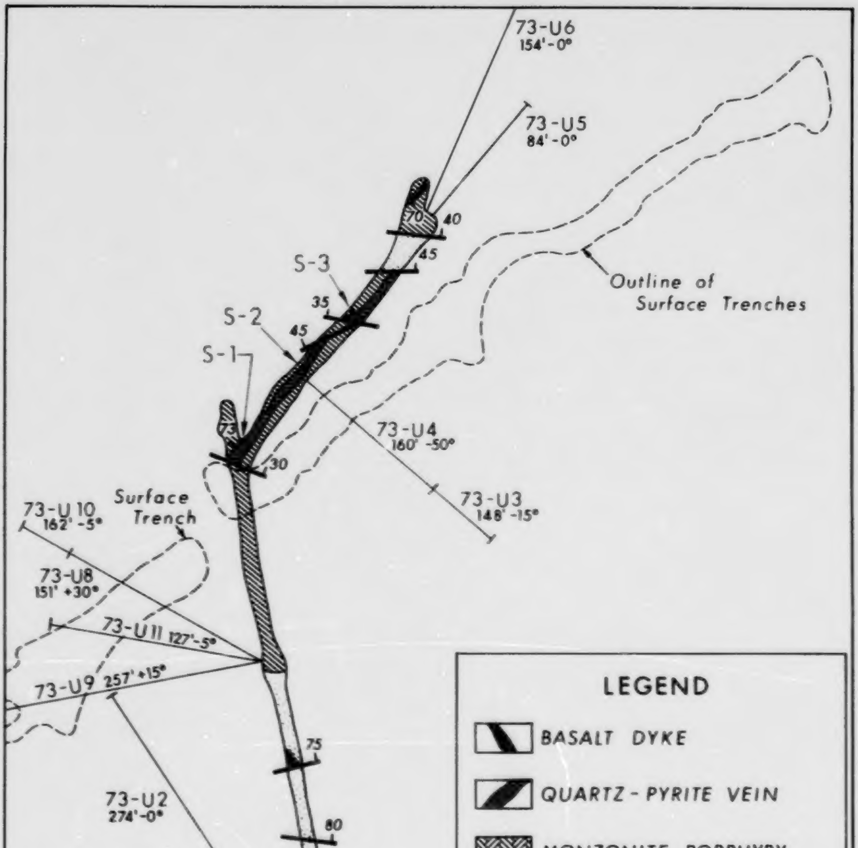

73-U6
154'-0°
73-U5
84'-0°
70
40
45
S-3
35
S-2
45
S-1
Outline of Surface Trenches
73
30
73-U4
160' -50°
73-U3
148' -15°
Surface Trench
73-U 10
162' -5°
73-U8
151' +30°
73-U11 127'-5°
73-U9 257' +15°
75
73-U2
274'-0°
80
73-U1
126'-45°
75
70
N
Elevation 5420'
LEGEND
BASALT DYKE
QUARTZ - PYRITE VEIN
MONZONITE PORPHYRY
ALTERED AUGITE PORPHYRY
AUGITE PORPHYRY (BASALT)
FAULT
75
FRACTURE, VERTICAL
CHIP SAMPLE
S-1
UNDERGROUND DRILLHOLES
73-U1
SCALE - FEET
0
50
100
0
10
20
30
SCALE-METRES

Figure 46. Geology of the Chappelle adit.

DESCRIPTION: Locally, an andesitic agglomerate core zone is enclosed by porphyritic andesite. Both rocks have been propylitized. A zone of intense silicification and alunite alteration east and northeast of the core coincides roughly with arcuate airphoto linears. Traces of pyrite have been identified.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; geochemical survey, 15 rock samples taken from trenches on Hump 1-4, 6, 8, 25, and 86 and to the north of Put 6 and 8, 133 soil samples taken at 400-foot intervals on extension of the 1972 grid and on a contour traverse; time-domain IP and magnetometer survey, 5.5 line-miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 483; Assessment Reports 4680, 4681.

CHAPPELLE (94E-26) (Fig. E, No. 83)

By N. C. Carter

LOCATION: Lat. 57° 17' Long. 127° 06' (94E/6E)
OMINECA M.D. Eighteen miles north of Thutade Lake, at approximately 5,500 feet elevation.

CLAIMS: CHAPPELLE 1 to 90, 94 to 121, 138, 139, 146, 147, 156 to 168, 171, 172, 174 to 178, 184, 186, 188, 190, 192, 194 to 199, 201, 203 to 209, 217 to 221, 245 to 250, 256 to 263.

OWNER: Kennco Explorations, (Western) Limited.

OPERATOR: CONWEST EXPLORATION COMPANY LIMITED, 85 Richmond Street West, Toronto, Ont.

METALS: Gold, silver.

DESCRIPTION:

Gold and silver mineralization at the Chappelle property is contained in a northeast-striking quartz vein in Takla Group augite porphyries of basalt composition. Extensive trenching by Kennco Explorations, (Western) Limited from 1970 to 1972 traced the vein several hundred feet. Two short X-ray holes were also put down on the vein. The geologic setting of the deposit is described in Geology, Exploration, and Mining in British Columbia, 1971, pages 65 to 70.

The property was optioned to Conwest Exploration Company Limited in early 1973 and a decision was made to proceed with a crosscut to intersect the quartz vein at depth. The adit was collared some 230 feet below the surface trenches (Fig. 46) and intersected the vein 530 feet from the portal.

The first 50 feet of the crosscut encountered intensely fractured augite porphyry containing abundant pyrite in fractures. Pink zeolite (laumontite ?) alteration was also noted. Numerous faults of west and northwest trend also cut the volcanic rocks. A 20-foot-wide monzonite porphyry dyke with fault contacts intrudes the volcanic rocks 160 feet from the portal. This is a medium-grained porphyritic rock with euhedral 2 to 4-millimetre phenocrysts of sericitized plagioclase and chloritized hornblende in a feldspathic matrix. At a point 340 feet from the portal, grey-green volcanic rocks containing coarsely crystalline pyrite on numerous fractures are cut by a 4-foot-wide basalt dyke. Beyond this point, the volcanic rocks grade to a light grey silicified variety containing abundant disseminated pyrite.

The quartz vein is 10 feet wide and dips steeply to the north where it is intersected in the crosscut (Fig. 46). The vein here is drusy and contains abundant pyrite. Wallrocks are altered to a mixture of sericite and quartz and contain abundant pyrite as disseminations and in fractures. The hangingwall of the vein is marked by a 1-foot-wide zone of chlorite alteration in the volcanic rocks. Along the drift, the vein pinches and swells in width from 4 to 8 feet and is offset by northwest-striking, north-dipping faults. Forty feet from the face of the drift the vein terminates against a fault beyond which the volcanic rocks are relatively unaltered. At the face of the drift, a narrow quartz vein occurs in altered volcanic rocks.

Three chip samples were taken across the vein as exposed in the back of the drift. Sample locations are shown on Figure 46 and the results are tabulated below.

Sample No.	Width *feet*	Gold *oz. per ton*	Silver *oz. per ton*	Copper *per cent*
S–1	10	0.01	trace	.050
S–2	8	0.01	trace	.013
S–3	10	0.01	0.2	.016

Underground drilling also yielded disappointing results.

There seems little doubt that the quartz vein intersected in the adit is the same as that containing significant gold-silver values in the surface trenches. A re-examination of these trenches in 1973 indicated that the ore shoots tended to be oblique to the strike of the vein. A possibility exists that in longitudinal section, the ore shoots may rake moderately to the southwest. One of the underground holes drilled upward in a northwest direction intersected vein material containing some gold-silver values.

WORK DONE: Surface and underground geological mapping, 1 inch equals 50 feet covering Chappelle 3 and 4; underground diamond drilling, 11 holes totalling 1,703 feet and percussion drilling, 20 holes totalling 500 feet on Chappelle 3 and 4; surface workings surveyed; road construction, 6 miles (between Black Lake airstrip and Chappelle camp); trenching, 1,300 feet on Chappelle 3; underground work, 700 feet on Chappelle 3 and 4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, pp. 65-70; 1972, p. 484.

LAWYERS (SAUNDERS) (94E-17) (Fig. E, No. 85)

LOCATION: Lat. 57° 18' Long. 127° 12' (94E/6E)
OMINECA M.D. Twenty miles northwest of Thutade Lake, at approximately 5,800 feet elevation.

CLAIMS: LAWYERS, totalling 200.

OWNER: KENNCO EXPLORATIONS, (WESTERN) LIMITED, 730, 505 Burrard Street, Vancouver.

METALS: Gold, silver.

DESCRIPTION: The Lawyers property is underlain by Toodoggone volcanic rocks and Sustut Group sedimentary rocks (*see* Geology, Exploration, and Mining in British Columbia, 1971, pp. 63, 64). Near the northern part of the claim group, Toodoggone dacite porphyries and pyroclastic rocks are brecciated and silicified. Two random grab samples from this zone assayed 34.6 and 0.9 ounces per ton silver. The silicified zones are reported to contain very fine-grained native silver and electrum. No pyrite was noted in the area of the showings.

(94E/6E)

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims; geochemical survey, approximately 130 soil samples and 50 rock samples covering Lawyers 180-200; trenching, 2,400 feet on Lawyers 168-172, 181, 183-185.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 482; Assessment Report 4615.

GOLD (Fig. E, No. 8)

LOCATION: Lat. 57° 17'-20' Long. 127° 01.4'-08' (94E/6E)
OMINECA M.D. Stretching from 1 mile west to 2 miles south of the small lake at the headwaters of Saunders Creek, a northerly flowing tributary of the Toodoggone River.

CLAIMS: GOLD 2, 4, 6, 8 to 108, 200.

OWNERS: M. Maybury and P. W. Dunsford.

OPERATORS: NORTHAIR MINES LTD., WHITE RIVER MINES LTD., and BOW RIVER RESOURCES LTD., 333, 885 Dunsmuir Street, Vancouver.

DESCRIPTION: The claims are underlain by Toodoggone volcanic rocks, principally dacite and latite porphyry.

WORK DONE: Airborne magnetometer and VLF EM survey, 300 line-miles (64 line-miles covering claim group), using 660-foot lines and 450-foot terrain clearance.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 63, 64; Assessment Reports 4397, 4398.

DEW (Fig. E, No. 13)

LOCATION: Lat. 57° 24' Long. 127° 06.5' (94E/6E)
OMINECA M.D. Five miles west of Toodoggone Lake.

CLAIMS: DEW 1 to 74.

OPERATOR: AMAX POTASH LIMITED, 601, 535 Thurlow Street, Vancouver.

DESCRIPTION: Pyritic monzonite is exposed in the valley of McClair Creek and is overlain to the northwest by heterogeneous volcanic rocks.

WORK DONE: Reconnaissance surface geological mapping,; geochemical soil, silt, and rock chip survey, 388 samples taken at 400-foot intervals on lines 700 to 1,000 feet apart.

REFERENCE: Assessment Report 4497.

WAS, PIT, JUG (94E-31, 32) (Fig. E, No. 84)

LOCATION: Lat. 57° 27' Long. 127° 18' (94E/6E)
OMINECA M.D. Eleven miles southwest of Chukachida Lake, on the east side of Moosehorn Creek, at approximately 5,000 feet elevation.

CLAIMS: WAS 1 to 32, PIT 69 to 76, JUG 1 to 12, SUM 3 to 20, RIP 1 to 22, 24 to 34, 36 to 38.

OWNER: SUMAC MINES LTD., 1022, 510 West Hastings Street, Vancouver.

METALS: Lead, zinc, silver.

DESCRIPTION: The area is underlain by andesitic flows and breccias locally termed 'Toodoggone volcanics.' Mineralization consists of pyrite, sphalerite, and galena in quartz-carbonate veins and the adjacent volcanic wallrocks.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Pit 69, 71-75, Jug 1-10, Sum 5, 7, 9, 12-20, Was 1-4, 17-19, 21, 23, Rip 1-11, 13, 15, 17-19, 21, 22, 31, 33; ground magnetometer and time-domain IP survey, 22 line-miles covering Pit 69, 71-75, Was 1-4, 17-21, 23, Sum 5, 7, 9, 11-20, Jug 1-10, Rip 1-11, 13, 15, 17-19, 21, 22, 31, 33; geochemical soil and rock survey, 172 samples taken at 200 by 800-foot grid spacing covering Pit 69, 71-75, Jug 1-10, Sum 5, 7, 9, 12-20, Was 1-4, 17-19, 21, 23, Rip 1-11, 13, 15, 17-19, 21, 22, 31, 33; linecutting, 24 miles of grid.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 483, 484; Assessment Reports 4592, 4631.

RPM (94E-11) (Fig. E, No. 87)

LOCATION: Lat. 57° 32' Long. 126° 14' (94E/9E)
OMINECA M.D. Basnett Mountain, 9 miles southeast of junction of Obo and Finlay Rivers.

CLAIMS: RPM 1 to 22, REV 1 to 4.

OWNER: HIGHPLAIN EXPLORATION LTD., Box 96, Fort St. John.

METAL: Copper.

DESCRIPTION: A major shear zone strikes northwest through country rock slates. A subsidiary shear zone to the northeast, also in slates, is mineralized with quartz, ankerite, pyrite, chalcopyrite, and minor bornite, malachite, and azurite.

WORK DONE: Geochemical soil survey, 40 samples taken at 100 and 200-foot intervals along four lines covering RPM 1, 3, 4, and 6.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 188; Assessment Reports 2470, 2471, 4571.

CLAW (94E-46) (Fig. E, No. 102)

LOCATION: Lat. 57° 37' Long. 127° 21' (94E/11W)
LIARD M.D. Approximately 10 miles west of Chukachida Lake, at about 5,500 feet elevation.

CLAIMS: CLAW 1 to 64.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby V5G 1H4.

METAL: Copper.

DESCRIPTION: The claims are underlain by fine-grained porphyritic basalts of the Takla Group. Bornite, chalcopyrite, and malachite occur in fractures in the volcanic rocks.

WORK DONE: Linecutting, 5.2 miles of grid; geochemical soil survey, 178 samples taken at 200-foot intervals along seven variably spaced lines.

REFERENCE: Assessment Report 4745.

FRED (94E-43) (Fig. E, No. 88)

LOCATION: Lat. 57° 38′ Long. 127° 29′ (94E/11W)
LIARD M.D. Ten miles west of Mount McNamara near the confluence of the Stikine and Chukachida Rivers, at approximately 5,000 feet elevation.

CLAIMS: FRED 1 to 8.

OWNER: SUMAC MINES LTD., 1022, 510 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: The area is underlain by thick hornblende andesite and trachytic andesite units of Mesozoic age. Mineralization consists of pyrite, chalcopyrite, and galena in quartz-calcite veins.

WORK DONE: Surface geological mapping, 1 inch equals 800 feet; geochemical soil survey, 100 samples taken at 200 by 400-foot grid spacing; and linecutting, 5 miles of grid covering Fred 1-8.

REFERENCE: Assessment Report 4643.

TRUTCH 94G

DOPP (Fig. E, No. 74)

LOCATION: Lat. 57° 08′ Long. 123° 44′ (94G/4E)
LIARD M.D. Four miles south of Mount Bertha, 135 miles northwest of Fort St. John.

CLAIMS: DOPP 1 to 64.

OWNER: WORLDEX VENTURES LTD., 101, 535 Thurlow Street, Vancouver.

WORK DONE: 1972 and 1973 – geochemical soil survey, 789 samples taken on a 200 by 800-foot grid spacing covering all claims.

REFERENCE: Assessment Report 4480.

TRAP (Fig. E, No. 70)

LOCATION: Lat. 57° 10′ Long. 123° 41′ (94G/4E)
LIARD M.D. Sikanni Chief River-Mount Bertha area.

CLAIMS: TRAP 7 to 36, TRAPP 37-48.

OWNER: Vestor Exploration Ltd.

OPERATOR: AQUITAINE COMPANY OF CANADA LTD., 504 Fifth Avenue SW., Calgary, Alta.

DESCRIPTION: The property is underlain by medium grey cryptocrystalline dolomite and dark grey limestone of Middle Devonian age.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet; geochemical survey, 56 soil samples and 26 stream sediment samples covering all claims.

REFERENCE: Assessment Report 4517.

DEV (94G-4) (Fig. E, No. 75)

LOCATION: Lat. 57° 10' Long. 123° 45' (94G/4)
LIARD M.D. On Mount Bertha, north of Sikanni Chief River, at approximately 6,000 feet elevation.

CLAIMS: DEV 78 to 81, 96 to 101, 116 to 119, 127, JUNE 1 to 93, RB 2, 9 to 16, 41 to 80.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: The claims are underlain by limestones and dolomites of the Devonian Stone and Dunedin Formations. Mineralization consists of minor galena and sphalerite.

WORK DONE: Surface diamond drilling, four holes totalling 3,804 feet on June 10, 25, 55, and 57.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 487; Assessment Report 4090.

TRIM (Fig. E, No. 73)

LOCATION: Lat. 57° 15' Long. 123° 42' (94G/4E, 5E)
LIARD M.D. Trimble Creek, 1.5 miles southwest of Trimble Lake, 128 miles northwest of Fort St. John.

CLAIMS: TRIM 42, 44, 46, 48, 50, 52, 54, 56, 58, 60 to 80.

OWNERS: CREAM SILVER MINES LTD., JUNIPER MINES LTD., and GRANDORA EXPLORATIONS LTD., 107, 325 Howe Street, Vancouver.

DESCRIPTION: Limited outcrop in the area includes argillite and calcareous argillite, inferred to belong to the Besa River Formation; limestone is exposed at the south end of the property.

WORK DONE: 1972 – flagged chain and compass grid; geological mapping along creek and grid lines; geochemical soil survey, 326 samples taken at 200 by 800-foot grid spacing.

REFERENCE: Assessment Report 4482.

LYNDA (94G-8) (Fig. E, No. 72)

LOCATION: Lat. 57° 15' Long. 123° 45' (94G/4, 5)
LIARD M.D. East of Cranswick Lake, at approximately 6,500 feet elevation.

CLAIMS: LYNDA 1 to 60.

OWNER: CANADIAN SUPERIOR EXPLORATION LIMITED, 2201, 1177 West Hastings Street, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: Minor galena and sphalerite occur in limestone and dolomite of the Devonian Stone and Dunedin Formations.

WORK DONE: Geochemical rock survey, 144 samples taken at 200 by 800-foot grid spacing covering Lynda 1-4, 6, 8, 15-24.

REFERENCE: Assessment Report 4790.

LAD (94G-14) (Fig. E, No. 105)

LOCATION: Lat. 57° 05' Long. 123° 53' (94G/4W)
LIARD and OMINECA M.D. Mount McCusker, 50 miles west of Pink Mountain (Mile 143, Alaska Highway), at approximately 6,000 feet elevation.

CLAIMS: LAD 1 to 8, 10, 27 to 38, 53 to 62, 64, 80, 82 to 92, 103 to 118, 129 to 150, LASS 6 to 11.

OWNER: BRITISH NEWFOUNDLAND EXPLORATION LIMITED, 704, 602 West Hastings Street, Vancouver.

METALS: Zinc, lead.

DESCRIPTION: The valley east of Mount McCusker exposes a southwest-dipping sequence of dolomite with three intercalations of quartzite and sandy dolomite and one of dolomite breccia. These intercalations pinch out to the northwest, and the upper part of the sequence grades to shaly dolomite and dolomitic shale. This sequence is structurally overlain by a thrust slice of shale and argillaceous limestone, and an upper plate of calcareous shales and siltstones. The axis of a shallow syncline emerges from the thrusts north of Mount McCusker. In the dolomitic breccia unit, named Tillicum, two zones of mineralization are exposed, separated by 1,000 feet of talus cover. Sphalerite, pyrite, and minor galena occur in the secondary white dolomitic matrix.

WORK DONE: Regional geological mapping, 1 inch equals 1,000 feet and detailed geological mapping, 1 inch equals 50 feet; geochemical survey, 42 chip samples taken from talus and outcrop, 101 rock samples taken at one-quarter mile intervals on three lines, and 120 silt samples taken at approximately 500-foot intervals covering all claims; topographic mapping, 1 inch equals 50 feet covering a portion of the claims.

REFERENCE: Assessment Report 4865.

JR (Fig. E, No. 104)

LOCATION: Lat. 57° 06' Long. 123° 51' (94G/4W)
LIARD M.D. Approximately 18 miles south of Redfern Lake, 4 miles east of Mount McCusker, at about 5,500 feet elevation.

CLAIMS: JR 1 to 54.

OWNER: BRITISH NEWFOUNDLAND EXPLORATION LIMITED, 704, 602 West Hastings Street, Vancouver.

METALS: Lead, zinc.

DESCRIPTION: Stone Formation dolomite in the core of a dome is enclosed by Dunedin Formation dolomite and Besa River shale. The dome is overridden from the west by successive thrust plates of Stone dolomite and Nonda dolomite.

WORK DONE: Surface geological mapping, 1 inch equals 2,000 feet; geochemical soil survey, 76 samples taken at 200-foot centres covering JR 1-9, 19-48.

REFERENCES: Assessment Reports 4203, 4886.

BERTHA (Fig. E, No. 3)

LOCATION: Lat. 56° 59′ - 57° 13.5′ Long. 123° 44.5′ - 52.5′ (94G/4, 94B/13W)
LIARD M.D. South of Mount Bertha, 40 miles west of Pink Mountain and 15 miles north of Robb Lake, at approximately 5,800 feet elevation.

CLAIMS: BRIN claims, TOLL 6 to 34, 36, 38, 40, 42, 44, 46, LAU 1 to 20.

OWNER: BRITISH NEWFOUNDLAND EXPLORATION LIMITED, 704, 602 West Hastings Street, Vancouver.

METAL: Zinc.

DESCRIPTION: Middle Devonian carbonate rocks are underlain by Silurian rocks and overlain by Upper Devonian shales. The local geology is complicated by imbricate thrusting and folding.

WORK DONE: Geochemical survey, 133 soil samples taken at 100-foot centres and approximately 60 replicate soil samples taken from grid stations sampled in 1972 covering Toll 18-25.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 462; Assessment Reports 4203, 4884.

INBE (Fig. E, No. 76)

LOCATION: Lat. 57° 11′ Long. 123° 49′ (94G/4W)
LIARD M.D. Sikanni Chief River, west of Bartle Creek.

CLAIMS: INBE 1 to 36.

OWNERS: J. A. Greig and A. Rich.

OPERATOR: CREAM SILVER MINES LTD., 9th Floor, 850 West Hastings Street, Vancouver.

DESCRIPTION: The north part of the claim area is underlain by limestone containing quartz lenses, which dip gently to moderately east. Along the south boundary, southwest-dipping Besa River shales are exposed along Bartle Creek.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; linecutting, approximately 16 miles of grid; geochemical soil survey, 420 samples taken at 200 by 800-foot grid spacing covering Inbe 1-36.

REFERENCE: Assessment Report 4622.

BOOT (94G-13) (Fig. E, No. 103)

LOCATION: Lat. 57° 15′ Long. 123° 51′ (94G/4W, 5W)
LIARD M.D. Six miles south of Redfern Lake, on Colledge Creek.

CLAIMS: BOOT 1 to 20, HEEL 1 to 20.

OWNERS: J.C. Needoba and R. Turner.

OPERATORS: BELMORAL MINES LTD. and GRANDORA EXPLORATIONS LTD., 107, 325 Howe Street, Vancouver.

METAL: Lead.

(94G/4W, 5W)

DESCRIPTION: The property is underlain mainly by thick-bedded limestone, which is overlain to the northeast by thin-bedded limestone and interbedded limestone and shale. Traces of sphalerite occur in the thick-bedded limestone and traces of galena in quartz veins cutting the limestone.

WORK DONE: Surface geological mapping, 1 inch equals 800 feet; linecutting, 21 miles of grid; geochemical soil survey, 512 samples taken at 200 by 800-foot grid spacing covering all claims.

REFERENCE: Assessment Report 4847.

QYR, IRA (Fig. E, No. 71)

LOCATION' Lat. 57° 16' Long. 123° 48' (94G/4W, 5W)
LIARD M.D. Approximatley 1,000 feet west of Cranswick Lake, Redfern Lake area.

CLAIMS: QYR 1 to 24, IRA 1 to 32, MEG 1 to 24, KEY 1 to 12.

OWNER: Vestor Exploration Ltd.

OPERATOR: AQUITAINE COMPANY OF CANADA LTD., 540 Fifth Avenue SW., Calgary, Alta.

DESCRIPTION: The property is underlain by Besa River shale and limestone of the Dunedin Formation along the east side. Dunedin Formation is thrust onto the Besa River Formation along the west side of the property.

WORK DONE: Reconnaissance surface geological mapping, 1:10,000; geochemical survey, 415 soil samples taken on a nominal 100-metre grid covering QYR 13-24 and IRA 17-32 and 150 stream sediment samples covering all claims.

REFERENCE: Assessment Report 4518.

TRI (94G-7) (Fig. E, No. 69)

LOCATION: Lat. 57° 16' Long. 123° 51' (94G/4W, 5W)
LIARD M.D. Six miles south of Redfern Lake.

CLAIMS: TRI 1 to 110.

OWNER: AQUITAINE COMPANY OF CANADA LTD., 540 Fifth Avenue SW., Calgary, Alta.

METALS: Copper, lead, zinc, barite.

DESCRIPTION: A folded sequence of Muncho-McConnell and Stone Formation dolomites and Dunedin Formation linestone and dolomites has been disrupted by one thrust fault and thrust over Besa River shale on a more easterly fault. Two barite-filled breccia zones cut Dunedin limestone in the hangingwall of the easterly thrust on the ridge north of Nordling Creek. One vein contains some chalcopyrite and malachite, and the other contains large blebs of sphalerite and galena. In cliffs south of Nordling Creek a 1 to 2-foot subconformable vein of barite in Dunedin limestone contains galena and sphalerite. North of Colledge Creek a basal zone of the Dunedin contains abundant geodes filled with barite and some galena and sphalerite.

(94G/5W)

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet and geochemical survey, 130 stream sediment samples taken at 200-foot intervals along five main creeks.

REFERENCE: Assessment Report 4692.

BE PLATEAU (94G-12) (Fig. E, No. 81)

LOCATION: Lat. 57° 20′ Long. 123° 50′ (94G/5W)
LIARD M.D. Four miles northeast of Redfern Lake, at approximately 6,200 feet elevation.

CLAIMS: BE 221 to 230, 311 to 326.

OWNER: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver.

METAL: Lead.

DESCRIPTION: The claim group is underlain by fossiliferous, uniform dark grey limestone of the Dunedin Formation. Mineralization consists of galena with calcite and/or barite in small pods and veins.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims and 1 inch equals 200 feet covering Be 319-324; geochemical soil survey, 360 samples, 13 line-miles covering Be 319-324; topographic mapping and linecutting covering Be 319-324.

REFERENCE: Assessment Report 4395.

BE VALLEY (Fig. E, No. 82)

LOCATION: Lat. 57° 21′ Long. 123° 46′ (94G/5W)
LIARD M.D. Along the Besa River from the eastern tip of Redfern Lake.

CLAIMS: BE 1 to 72, 81 to 96, 101, 102, 105 to 120, BE 1 and 2 Fractions.

OWNER: NORANDA EXPLORATION COMPANY, LIMITED, 1050 Davie Street, Vancouver.

DESCRIPTION: Dolomite and limestone of the Silurian Nonda Formation have been overthrust onto Lower Devonian carbonate rocks of the Wokkpash and Stone Formations. Limestone of Middle Devonian Dunedin Formation crops out along the drainage of Fairy Lake.

WORK DONE: 1972 — geochemical survey covering all claims.

REFERENCE: Assessment Report 4394.

EGG, FOO (94G-2) (Fig. E, No. 77)

LOCATION: Lat. 57° 23′ Long. 123° 50′ (94G/5W)
LIARD M.D. Immediately north of the east end of Redfern Lake.

CLAIMS: EGG 1 to 22, FOO 1 to 25, CHILLY 1 to 36, VISTA 1 to 4, DAMN 1 to 20.

OWNER: Vestor Explorations Ltd.

OPERATOR: RIO TINTO CANADIAN EXPLORATION LIMITED, Box 49018, Vancouver V7X 1G4.

(94G/5W)

METALS: Lead, barite.

DESCRIPTION: Middle Devonian limestones of the Dunedin Formation underlie the property with overlying Besa River Formation shales outcropping to the north and east. Dolomite of the Stone Formation underlies the limestone and outcrops to the southwest of the property. Very minor galena was noted in barite veins cutting the limestone.

WORK DONE: Reconnaissance surface geological mapping, 1 inch equals 400 feet covering Egg, Foo, Damn, and Chilly claims; photogeological survey, approximately 45 square miles on and around the claims; magnetometer survey, 19 line-miles; gradient-array IP survey, 16.6 line-miles; and pole-dipole IP survey, approximately 6 line-miles covering Egg 1-8, Foo 6, 10, 12, 14, 16-25, Damn 1-10, and Chilly 36; geochemical soil survey, 315 samples taken on a nominal 500 by 700-foot grid spacing covering Egg 1-8, 14-20, 22, Foo 1-25, Damn 1-18, and Chilly 32-36.

REFERENCES: Assessment Reports 4529, 4530, 4531, 4532.

KEI (94G-9) (Fig. E, No. 78)

LOCATION: Lat. 57° 25' Long. 123° 50' (94G/5W)
LIARD M.D. Headwaters of Petrie Creek, Redfern Lake area.

CLAIMS: KEI 1 to 154.

OWNER: AQUITAINE COMPANY OF CANADA LTD., 540 Fifth Avenue SW., Calgary, Alta.

METALS: Lead, zinc.

DESCRIPTION: A folded sequence of Muncho-McConnell and Stone dolomites and sandy dolomites and Dunedin limestone and dolomite is thrust eastward over Besa River shale.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet; geochemical stream sediment survey, 96 samples taken at 200-foot intervals along six creeks covering all claims.

REFERENCE: Assessment Report 4722.

RUST (94G-11) (Fig. E, No. 80)

LOCATION: Lat. 57° 30' Long. 123° 53' (94G/5W, 12W)
LIARD M.D. Between Keily and Richards Creeks, north of Redfern Lake.

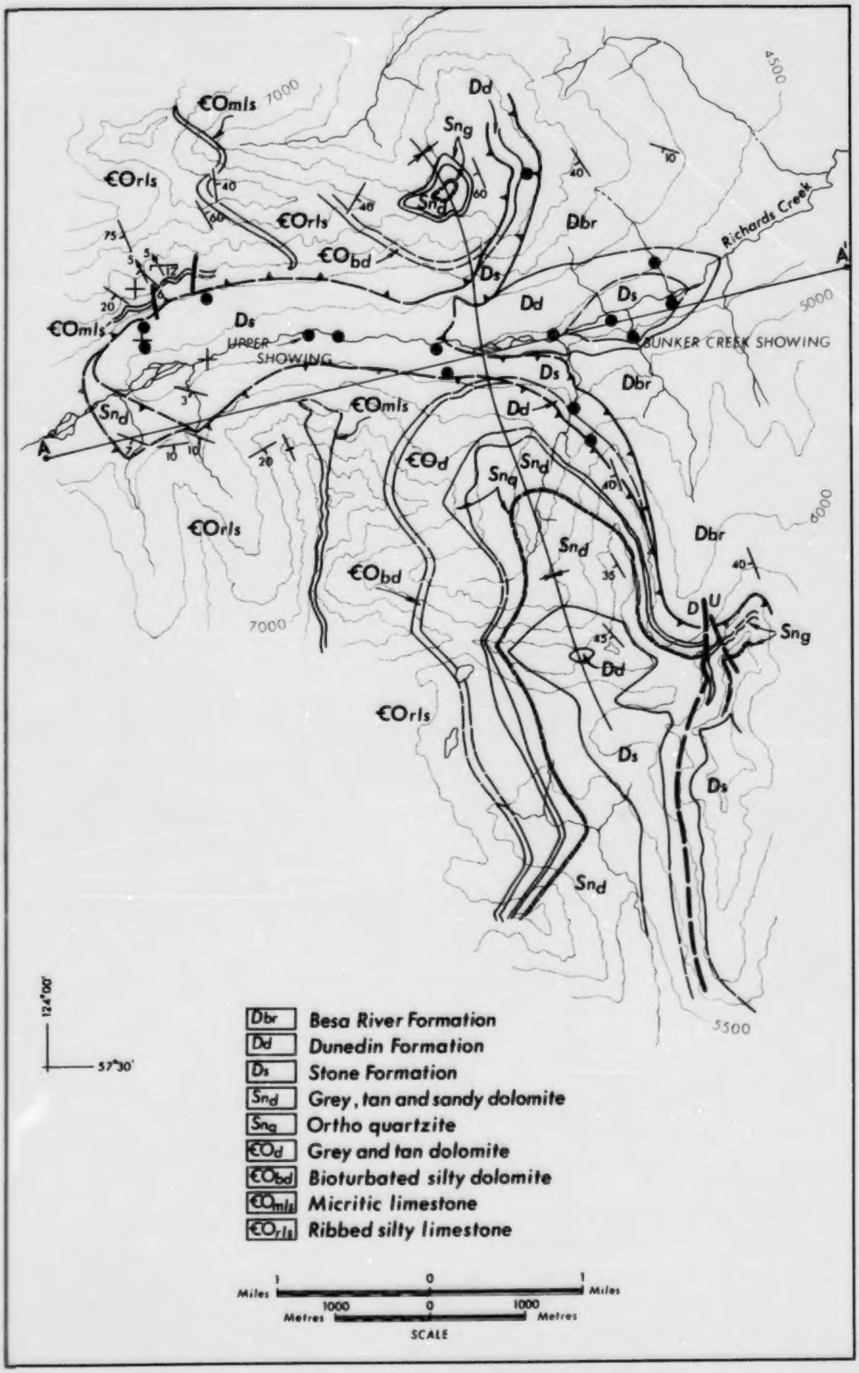
CLAIMS: RUST 1 to 112, 117, 118.

OWNER: Tyee Lake Resources Ltd.

OPERATOR: AQUITAINE COMPANY OF CANADA LTD., 540 Fifth Avenue SW., Calgary, Alta.

METALS: Lead, zinc.

DESCRIPTION: The property is underlain by a thick succession of dolomite, with quartzite and dolomitic sandstone of Lower and Middle Devonian age. Brown dolomitic limestone belonging to the Silurian Nonda Formation occurs to the west and Mississippian Besa River shale to the east. Some thin veins of galena and sphalerite occur within the top silicified (cherty ?) beds of the Middle Devonian Dunedin Formation.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Dbr Besa River Formation
Dd Dunedin Formation
Ds Stone Formation
Snd Grey, tan and sandy dolomite
Sng Ortho quartzite
€Od Grey and tan dolomite
€Obd Bioturbated silty dolomite
€Omls Micritic limestone
€Orls Ribbed silty limestone
1 Miles 0 1 Miles
1000 Metres 0 1000 Metres
SCALE

Figure 47. Geological map of Richards Creek area.

(94G/12W)

WORK DONE: Surface geological mapping, 1:10,000; geochemical survey, 174 stream sediment samples covering all claims and 350 soil samples taken on a 150 by 150-foot grid spacing covering Rust 73, 75, 77, 79, and 95-110.

REFERENCE: Assessment Report 4484.

RIC (94G-10) (Fig. E, No. 79)

By R. I. Thompson

LOCATION: Lat. 57° 35' Long. 123° 55' (94G/12W)
LIARD M.D. Thirty-six miles west of Trutch, near Richards Creek, at approximately 4,800 feet elevation.

CLAIMS: RIC, totalling approximately 106; HEW, totalling approximately 51.

OWNER: COMINCO LTD., 2300, 200 Granville Square, Vancouver.

METALS: Zinc, lead.

DESCRIPTION:

INTRODUCTION: The Rick property is located in the Main Ranges of the Northern Rocky Mountains. The claims straddle part of a north-northwest-trending belt of Lower and Middle Paleozoic miogeoclinal carbonate rocks, quartzites, siltstones, and shales which are exposed in a series of folded thrust panels that have undergone northeasterly directed tectonic transport. Several zinc and lead showings occur in the upper part of the Stone Formation, a thick dolomite of Middle Devonian age.

STRATIGRAPHY: A thick succession of carbonate and epiclastic rocks of Cambro-Ordovician, Silurian, and Devonian ages crop out on the claim area. An attempt was made to keep major stratigraphic subdivisions consistent with those of Taylor and Stott (1973) in the Tuchodi Lakes map-area north of Richards Creek, however, no distinction has been made between the Cambrian (Atan Group) and the Ordovician (Kechika Group), the basal Devonian Muncho-McConnell Formation was not recognized, and the Wokkpash Formation was included with the Lower Devonian Stone Formation.

The Cambro-Ordovician succession is divided into four lithological distinct units (Plate XXIA and Fig. 47). The lowest unit (€O$_{rls}$) is composed of tan-weathering ribbed limestone. Within this unit is a thin distinctive light grey micritic limestone marker (€O$_{mls}$). A recessive brown-weathering, bioturbated silty dolomite (€O$_{bd}$) separates the ribbed limestones from the upper unit of cliff-forming grey dolomite with standstone interbeds (€O$_{d}$).

The ribbed limestone unit consists of interbedded and interlaminated grey limestone (and dolomitic limestone) and tan-weathering dolomitic siltstone and sandstone. Many beds contain small-scale cross-beds, ripple laminations, and load features. Beds, a few feet thick, of massive light grey-weathering fine-grained dolomite laced with hairline subvertical fractures filled with white sparry dolomite are common in the lower part of the unit. The micritic limestone marker unit is approximately 150 feet thick and contains numerous styolites parallel to bedding. The bioturbated silty dolomite is approximately 300 feet thick and is conspicuous because of its recessive weathering nature. It is thin bedded to laminated, and cross-bedding is present throughout. The upper dolomite unit is lithologically variable. Massive fine crystalline grey dolomite is interbedded with cross-stratified dolomitic sandstone and siltstone, thin orthoquartzites, and a distinctive pisolite bed. Scour and fill features, mud cracks, burrows, and ripple laminations are common in most sandy beds.

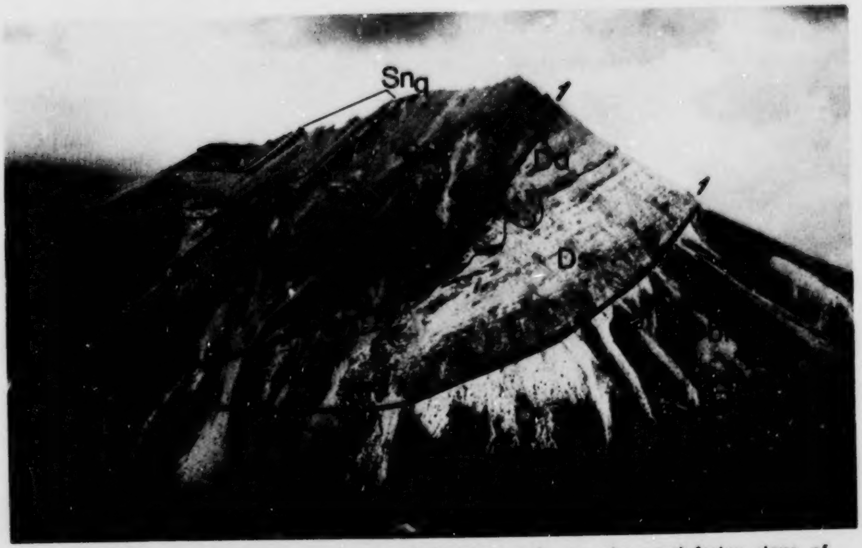


Plate XXIA. Thrust sheet of Cambro-Ordovician rocks on the north-facing slope of Richards Creek showing three of the units mapped: ribbed limestone unit (ЄO_{rls}), micritic limestone unit (ЄO_{mls}), and bioturbated dolomite unit (ЄO_{bd}). This thrust sheet sits on the Stone Formation (Ds) which occupies the valley bottom. Note the overturned recumbent anticline of ЄO_{rls} and ЄO_{ms}.

Plate XXIB. South-facing slope of Richards Creek showing three thrust panels. The lowest panel of Dunedin (Dd) and Besa River Formations (Dbr) is overthrust by the Stone (Ds) and Dunedin Formations which in turn are overthrust by Cambro-Ordovician (ЄO) rocks and the Silurian (Sn and Sn_q) Nonda Formation.

The Silurian Nonda Formation (Sn) consists of medium grey dolomite and dolomitic sandstone with a white 30-foot-thick orthoquartzite marker bed (Sn_q)at its base and a second, 15-foot orthoquartzite in the lower half of the unit. Fossiliferous beds, from which ***Halysites*** sp., ***Syringopora*** sp., ***Favosites*** sp., ***Synaptophyllum*** sp., and horn corals were identified, occur throughout the section. Upper part of the succession is medium to dark grey and thin bedded with argillite interbeds; this may belong to the Devonian Muncho-McConnell Formation which was not recognized in the field.

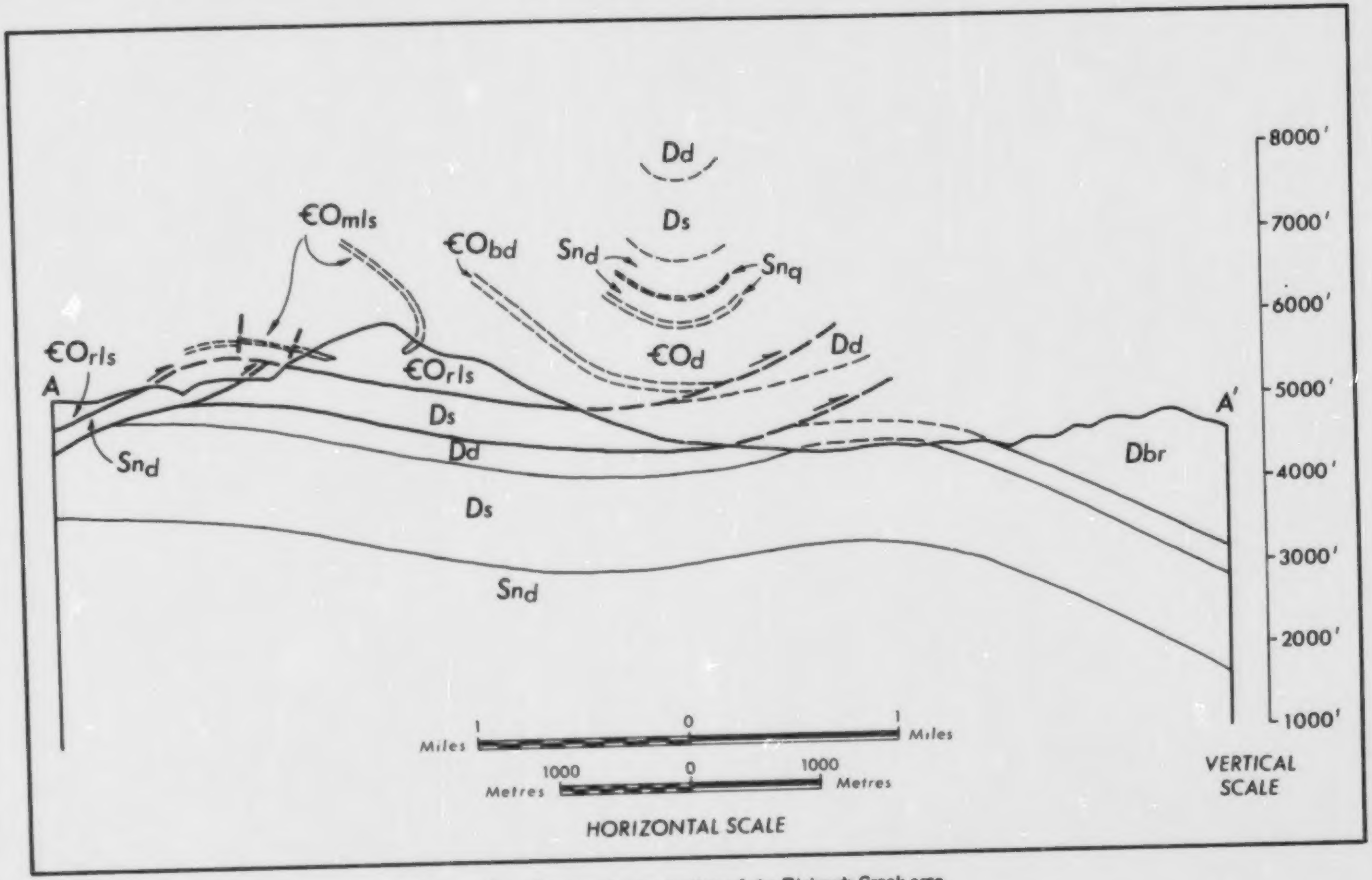
A conspicuous change in colouration from medium to light grey was used to distinguish between the Silurian and the Devonian succession. This corresponds with a change in lithology from the darker thin-bedded dolomites to light blocky dolomitic sandstone, and sandy dolomite with thin orthoquartzite beds. These lithologies grade discontinuously upward into massive fine and medium crystalline dolomite with sandy intervals. This thick succession of dolomites was mapped as the Stone Formation (Ds), including the basal dolomitic sandstones and orthoquartzites which probably belong to the Wokkpash Formation (Taylor and MacKenzie, 1970). Upper part of the Stone Formation consists of blocky fine crystalline dolomite with thin interbeds of micritic limestone near its upper contact. Some beds are finely laminated with apparent stromatolitic structures. Vugs filled with coarse sparry dolomite and quartz are common in some beds.

Overlying the Stone Formation are light to medium grey micritic limestone of the Middle Devonian Dunedin Formation (Dd). The formation comprises at least several hundred feet (a complete section is not preserved locally) of laminated micritic limestone, oolitic limestone, and occasional interbeds of bioturbated micritic limestone.

The Besa River Formation (Dbr) is a recessive, black, moderately fissile shale which overlies the Dunedin Formation.

STRUCTURE: Structure of the Richards Creek area is shown on Figure 48, a structure cross section of the map-area. Folding and thrust faulting dominate the structural style and have had the effect of repeating the stratigraphy (Plate XXIB). The Devonian carbonate units have responded as broadly folded competent thrust panels whereas the less competent and lithologically more variable Cambro-Ordovician and Silurian rocks and the Besa River shale have been intricately folded at the mesoscopic and regional scales into tight northeasterly overturned folds, often with ruptured axial planes. The Cambro-Ordovician forms a large recumbent, nearly vertical isoclinal nappe in the western portion of the map-area (Plate XXIA) with its lower limb truncated by the thrust fault shown on Figure 48. Adjacent to the anticline is an upright broad syncline with the Stone and Dunedin Formations in its core.

MINERALIZATION: The lead-zinc occurrences are confined to the upper part of the Stone Formation and the lower part of the Dunedin Formation. Fourteen occurrences are known to date which are divided between separate thrust panels of the Stone and Dunedin Formations. Two showings have received considerable examination – the 'Bunker Creek showing' is in the lower thrust panel approximately 100 feet stratigraphically below the Stone-Dunedin contact and the 'upper showing' is situated in the overlying thrust panel in and adjacent to Richards Creek. Sixteen diamond-drill holes totalling 3,381 feet were drilled in the summers of 1972 and 1973, five into the 'Bunker Creek showing' and eleven into the 'upper showing.'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VERTICAL SCALE
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0
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Miles
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Metres
Metres
HORIZONTAL SCALE

Figure 48. Structural cross-section of the Richards Creek area.

Plate XXIIA. Irregular zone of oxidation in the upper part of the Stone Formation; sulphide mineralization occurs in horizontal and vertical fractures.

Plate XXIIB. Pyrite, marcasite, sphalerite, and galena in fractures (see arrows) and pods with coarse sparry dolomite and quartz.

Plate XXIII. Bedding plane exposure of coarse dolomite breccia zone in Stone Formation; these are typical of the Robb Lake area but are not mineralized at Richards Creek.

Pyrite, marcasite, sphalerite, and galena are the sulphide minerals present. They occur as irregular massive pods, along fractures, and associated with white sparite and quartz-filled cavities. The massive mineralization (Plate XXIIA) normally constitutes a fine-grained mixture of pyrite and marcasite containing irregular patches, blebs, and fractures of later coarser grained sphalerite. Remnants of dolomite with diffuse boundaries and containing fine pyrite and marcasite suggest replacement by the latter. The fracture fillings (Plate XXIIB) tend to be perpendicular to or parallel to bedding, but may coalesce into irregular networks of veins containing fragments of dolomite. Coarse-grained sphalerite is most common with some patches of fine pyrite and marcasite which appear to have replaced original dolomite. The cavity fillings are spatially related to the fractures and are filled with very coarse sparry dolomite and quartz, sphalerite, pyrite, and marcasite. Galena occurs in most showings but only as a minor constituent.

Coarse dolomite breccias (Plate XXIII) typical of the Robb Lake area are present in the Stone Formation but they do not appear to be important with regard to lead-zinc mineralization. At present there is no obvious explanation for the distribution of showings. Fractures appear to have provided the necessary permeability for migration of metal-bearing fluids.

Surface exposures and limited diamond-drill results indicate the exposed showings do not have great lateral extent. For this reason, mineral potential of the property is not obvious at this time. The large number of showings exposed at surface is a good indication that considerable mineralization must exist down-dip. If the thrust panel containing the 'upper showing' has a shallow westward dip, as indicated in Plate XXIB, further testing of the Dunedin-Stone stratigraphic interval would be possible along the valley bottom of Richards Creek with relatively short diamond-drill holes.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet covering all claims; IP survey, 6 line-miles covering Ric 19, 31, 33-38, 46, 48, 50; geochemical soil survey, 350 samples covering Ric 1-8 and 30-50; surface diamond drilling, nine holes totalling 2,063 feet on Ric 33, 36, 50.

REFERENCES: Taylor, G. C. and W. S. MacKenzie, 1970, Devonian Stratigraphy of Northeastern British Columbia, *Geol. Surv., Canada,* Bull. 186; Taylor, G. C. and Stott, D. F., 1973, Tuchodi Lakes Map-Area, *Geol. Surv., Canada,* Mem. 373; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 489.

TUCHODI LAKES 94K

DOG (94K-65) (Fig. E, No. 89)

LOCATION: Lat. 58° 08' Long. 124° 12' (94K/1E)
LIARD M.D. On Dead Dog Creek, 7 miles south of Tuchodi River.
CLAIMS: DOG, totalling 179 claims and 25 fractions.
OWNER: COMINCO LTD., 2300, 200 Granville Square, Vancouver.
METALS: Lead, zinc.

(94K/6W)

DESCRIPTION: Zinc-lead mineralization occurs in gently dipping Devonian carbonate and clastic rocks.

WORK DONE: Surface geological mapping, linecutting, 20 miles of pace and compass grid; geochemical soil suvey, 560 samples taken at 200 by 400-foot grid spacing covering Dog 24, 51-56, 58, 64-73, 80-87, 108, 110, 112, 142; surface diamond drilling, two holes totalling 198 feet on Dog 12 and 13.

REFERENCES: *B.C. Dept. of Mines & Pet Res.*, GEM, 1972, p. 490; Assessment Reports 4202, 4393.

JOAN (94K-26) (Fig. E, No. 90)

LOCATION: Lat. 58° 28′ Long. 125° 16′ (94K/6W)
LIARD M.D. On Delano Creek, 98 miles southwest of Fort Nelson.

CLAIMS: JOAN 1 to 17, 19, 20, 27, 28, 36, JOAN 1 to 5 Fractions, JN 1 to 8.

OWNER: YAMOTO MINING & SMELTING LTD., 515, 602 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain mainly by limy argillite, sandstone, and dolomite of the Aida Formation. On the Joan 2 and 13, interbedded boulder conglomerate, phyllite, and chlorite schist are assigned to the Atan Group.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering Joan 2, 4, 13-15, 19 and JN 5, 6; magnetometer and VLF EM survey, 10.4 line-miles covering Joan 2-15, Joan 2-5 Fractions, and JN 1-4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 45; Assessment Reports 2641, 4639.

MAGNUM MINE (94K-3) (Fig. E, No. 91) By D.I.R. Henderson

LOCATION: Lat. 58° 30.6′ Long. 125° 24.2′ (94K/11W)
LIARD M.D. At the headwaters of Delano Creek.

CLAIMS: Fifty-eight, including ME, DAN, MAC, and HI.

OPERATOR: CONSOLIDATED CHURCHILL COPPER CORPORATION LTD., 702, 900 West Hastings Street, Vancouver.

METAL: Copper (production shown on Table I).

DESCRIPTION: Quartz-ankerite veins mineralized largely with chalcopyrite strike northeasterly and dip steeply.

WORK DONE:

Following a two-year shut-down, rehabilitation of the mine, mill, and two camps commenced in September. Ore production from the mine started in November and was increased to 500 tons per day by mid-December.

Construction of the new No. 2 tailings area was completed during December and the mill readied for start-up on January 1, 1974.

Mining is by shrinkage stopes using hand-held drills. Both track and trackless haulage are employed. Mine water is completely recycled, make-up being supplied from diamond-drill holes.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 81.

BY (Fig. E, No. 92)

LOCATION: Lat. 58° 31' Long. 125° 20' (94K/11W)
LIARD M.D. On the southwest slope of Yedhe Mountain.

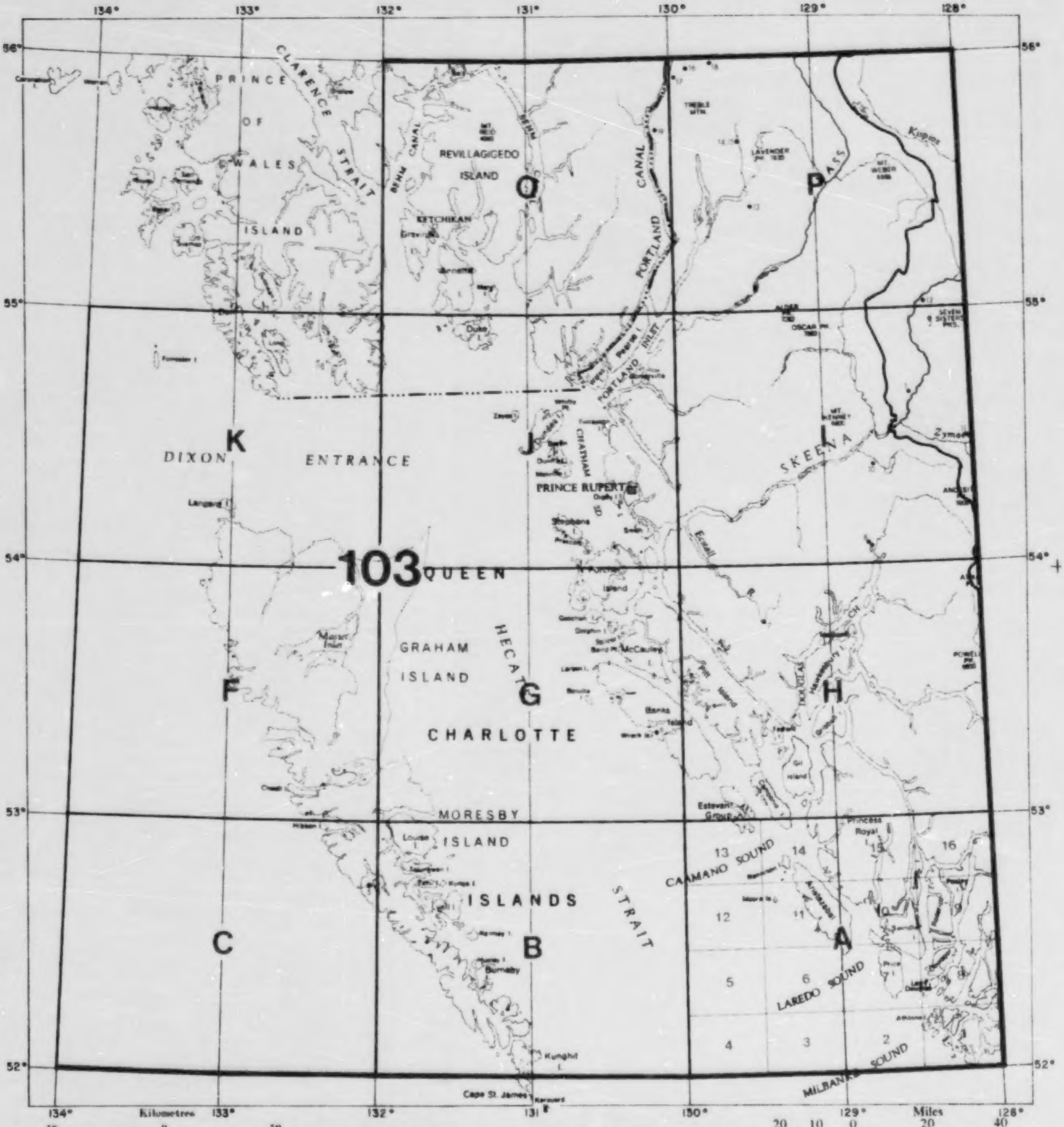
CLAIMS: BY 1 to 40.

OWNER: TANJO MINES LTD., 520, 602 West Hastings Street, Vancouver V6B 1P2.

DESCRIPTION: The property is underlain by Aida Formation comprising grey and black limestone, limy argillite, and limy shale of Helikian age. These formations are cut by steeply dipping gabbroic dykes. Exploration work was done to locate any copper mineralization associated with the dykes. So far no mineralization is known to exist.

WORK DONE: Geochemical soil survey, 580 samples covering By 11-13, 15, 21-26, 36, and 38 were taken at 100 by 400-foot grid spacing and were analysed for copper.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 43; Assessment Reports 2642, 4641.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REVILLAGIGEDO ISLAND
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TRIBLE MTN.
LAVENDER PK.
MT. WEBER
PASS
Kispiox
PORTLAND CANAL
PORTLAND INLET
Pearse I.
ALDER PK.
OSCAR PK.
SEVEN SISTERS PKS.
MT. HENNEY
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Langara I.
Zayas I.
Dundas I.
CHATHAM SD.
PRINCE RUPERT
Digby I.
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Porcher Island
SKEENA
Ecstall
103
QUEEN
CHARLOTTE
ISLANDS
GRAHAM ISLAND
HECATE
STRAIT
Masset Inlet
Goschen I.
Dolphin I.
Spicer I.
Banks Island
Pitt Island
DOUGLAS
Hawkesbury I.
Gribbell
Gil Island
Campania
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Estevan Group
MORESBY ISLAND
Louise I.
Lyell I.
Kunga I.
Ramsay I.
Huxley I.
Burnaby
Kunghit I.
Cape St. James
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LAREDO SOUND
MILBANKE SOUND
Princess Royal I.
Aristazabal I.
Swindle I.
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Figure F. INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 103

KEY TO PROPERTIES ON INDEX MAP, FIGURE F.

1. KOKANEE, J, page 487.
2. REGA, MAG, SEVEN SISTERS, CALEDONIA, page 487.
3. ETTA, page 487.
4. MAPLE LEAF, WIRELESS, OCEANIC, page 482.
5. TASU MINE, page 482.
6. BANKER, page 484.
7. PACKSACK, page 484.
8. BOWBYES, page 485.
9. JOON (JOAN), page 485.
10. LADY LUCK, LUCKY FORTUNE, page 485.
11. NORTHWEST, SNOW, DF, page 486.
12. MOGUL, page 487.
13. BRITISH COLUMBIA MOLYBDENUM MINE, page 489.
14. KITSOL, page 489.
15. RED POINT, ROAN ANTELOPE, page 489.
16. LITTLE JOE, GYPSY, page 490.
17. RED REEF, page 490.
18. RHS, page 491.
19. JJ-C, page 488.

WEST CENTRAL BRITISH COLUMBIA
(NTS Division 103 Figure F)

MORESBY ISLAND 103B, C

MAPLE LEAF, WIRELESS, OCEANIC (103B-42, 45) (Fig. F, No. 4)

LOCATION: Lat. 52° 16′ Long. 131° 08′ (103B/6E)
SKEENA M.D. Southern and western shores of Collison Bay, southeast end of Moresby Island.

CLAIMS: ITSA 1 to 18, CU 1 to 22.

OWNER: BARREL RESOURCES LTD., 307, 475 Howe Street, Vancouver.

METALS: Iron, gold, silver, copper.

DESCRIPTION: Basalt flows of the Karmutsen Formation are in contact with limestone of the Jurassic Kunga Formation which, in turn, is in contact with Cretaceous or Tertiary granitic type rocks. Chalcopyrite and magnetite occur as a metasomatic replacement of interlava limestone and a possible replacement of a shear zone.

WORK DONE: Linecutting and magnetometer survey, 4.6 line-miles; VLF EM survey, 2.9 line-miles; geochemical soil survey, 97 samples taken at 100 by 200-foot grid spacing covering Cu 17-19 and Itsa 7-10.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1918, p. 44; 1926, p. 68 (MEAL TICKET); Assessment Report 4668.

TASU MINE (103B-C-5, 7, 56) (Fig. F, No. 5)

By B. M. Dudas

LOCATION: Lat. 52° 45′ Long. 132° 03′ (103C/16E)
SKEENA M.D. On the south side of Tasu Sound, Moresby Island, extending from sea-level to 3,000 feet elevation.

CLAIMS: Twenty-one Crown-granted and 83 located claims. Key claims are: BLUEBIRD, ELIZABETH, TASSOO, WARWICK, and WEST JACK.

OWNER: WESFROB MINES LIMITED, 504, 1112 West Pender Street, Vancouver; mine office, Tasu; mine manager, Ken Blower.

METALS: Iron, copper (production shown on Table I).

DESCRIPTION:

The essential structure is a folded and tilted panel of stratified rocks surrounded and underlain in part by the northern termination of the San Christoval Batholith. The stratified succession includes the upper part of the Karmutsen Formation and the three members of the Kunga Formation. Only the two limestone members are closely involved in the ore zones. The stratified panel was repeatedly intruded by igneous rocks from its initial formation to late in the geological history of the area. First, Karmutsen basalts were cut by minor related sills. Next, a complex laccolith of diorite porphyry of considerable importance was emplaced principally between the Karmutsen and the Kunga Formations. Then the San Christoval Batholith was emplaced, followed by skarnification and mineralization. Finally two volumetrically important post-ore dyke swarms, the earlier andesitic and the later basaltic, were intruded. The magnetite ore and associated skarn very largely are found in a stratiform zone some 200 feet thick above the top of the Karmutsen Formation, replacing massive limestone and diorite porphyry (*B.C. Dept. of Mines & Pet. Res.,* Bull. 54, p. 184).

WORK DONE:

The magnetite and chalcopyrite orebodies are mined in three open pits on a two-shift, six-day schedule. Equipment used in the open pits is: one BE-150B electric shovel, one BE-88B diesel shovel, two 988 Caterpillar loaders, two D-8 Caterpillar tractors, two BE-40R electric drills, two Airtrac drills, and five Caterpillar 769-B 35-ton ore haulage trucks.

The 3 zone pit, at the highest mining elevation, has its bottom working level at 880 feet above sea level. Working faces are 35 feet high with the final pit wall made up of two bench heights (70 feet) and a berm, developing an overall pit wall slope of 50 degrees. Pre-shear blasting, on the top 35 feet of each wall, is done with 18-inch drill spacing to maintain stable final pit walls. Mining in 3 zone was intermittent in 1973.

In 2 zone pit, mining continued at an overall wall slope of 65 degrees. In this pit, three bench heights and a berm make up the final pit wall with the top bench being pre-sheared in the manner of 3 zone. Minor wedge failures were noted on the second bench at 920 elevation, however no instability of the high walls is apparent. Mining has progressed to the 815-foot elevation.

In 1 zone pit, mining has progressed to the 185-foot elevation. This is the lowest elevation in the mine at present.

Ore from the pits is conveyed to the crusher via a system of ore passes which also serve as ore pockets. From 3 zone, the ore pass terminates at the 650 level haulage adit where it is transferred by rail car to the primary crusher ore pass system. Ore from 2 zone is routed through the haulage adit system or through an ore pass directly to the crusher. Ore from 1 zone is trucked directly to an ore pass feeding the crusher.

The total production for the year from the three pits was 1,616,058 tons of ore with a waste:ore ratio of 0.32:1 (cubic yards per ton). The average daily production was 8,000 tons of ore.

An underground development drift was initiated from the 650 haulage level at a point 1,860 feet from the portal. The main drift (14 by 18 feet) advanced 215 feet and will serve as an exploration base when completed to an ultimate 1,400 feet.

A crosscut from the drift (also 14 by 18 feet) was advanced 131 feet toward an underground stope location designated '3 zone underground.' Mining is scheduled for 1974. Equipment in use underground consists of one 988 Caterpillar loader with catalytic scrubber, one 3-boom Gardner-Denver drill jumbo. Air is supplied by a 1,400-cubic-foot-per-minute Gardner-Denver stationary compressor. A 100,000-cubic-foot-per-minute fan was installed to supply ventilation.

Other underground development included installation of an emergency ladderway from the haulage level to 3 zone pit, through the ventilation raise and the drainage raise.

The primary and secondary crushing plants operated on a two-shift, six-day weekly schedule. The concentrator operated on a three-shift, seven-day schedule producing 922,625 tons of iron and copper concentrates. Additional capacity was added to the iron flotation circuit, effectively doubling the retention time and improving quality control of the product.

At December 31, 1973, 163 persons were employed on surface and 9 underground. The company maintains Tasu, a townsite on Gowing Island, connected by causeway to the mine and plant area. Modern single-family houses, townhouses, and apartments are available for married personnel. Two modern single-men's residences and a motel are available for single personnel. A medical doctor and a full-time nurse reside in the townsite. A well-equipped hospital, a school to grade 10, and a recreational complex with indoor swimming pool are maintained by the company.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1967, pp. 54-56; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 101; 1971, pp. 110, 111; 1972, pp. 494-497. *B.C. Dept. of Mines & Pet. Res.,* Bull. 54, pp. 183-189.

DOUGLAS CHANNEL 103H and part of 103G

BANKER (103H-G-38) (Fig. F, No. 6)

LOCATION: Lat. 53° 21' Long. 130° 09' (103G/8E)
SKEENA M.D. On the west coast of Banks Island, extending northeasterly from the head of Foul Bay, at approximately 10 feet elevation.

CLAIMS: BANKER 200 to 205.

OWNER: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver.

METAL: Gold.

DESCRIPTION: Auriferous pyrite and arsenopyrite occur as fracture fillings and replacements in granitic and sedimentary rocks.

WORK DONE: Magnetometer survey, 2.3 line-miles; EM survey, 2.3 line-miles; geochemical soil survey, approximately 200 samples, 2.3 line-miles covering all claims.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1963, p. 21; Assessment Report 4493.

PACKSACK (103H-G-13) (Fig. F, No. 7)

LOCATION: Lat. 53° 47' Long. 129° 27' (103H/14W)
SKEENA M.D. About one-quarter mile north of Lower Lake, at the south end of the ridge, lying at the bend of the Ecstall River, at approximately 1,500 feet elevation.

CLAIMS: PACKSACK 1 to 8, GUNNYSACK 1 to 8.

OWNER: Texasgulf, Inc.

OPERATOR: ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.

METALS: Minor copper, zinc, (silver, gold).

DESCRIPTION: Chlorite-sericite and quartz-sericite schists, phyllites, and metasiltite are intruded by masses of chloritic diorite of the Coast Range intrusions and by younger lamprophyre dykes. Pyrite is disseminated through the quartz-sericite schist in variable amounts and locally forms a massive body as much as 20 feet wide. The pyrite carries low values in copper and zinc.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet covering all claims; geochemical soil survey, 119 samples taken on 100 by 750-foot grid spacing covering 2 line-miles on Gunnysack 1-8 and Packsack 1-4.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1960, p. 12; Assessment Reports 214, 216, 4509.

PRINCE RUPERT – TERRACE 103I and part of 103J

JOON (JOAN) (103I-J-172) (Fig. F, No. 9)

LOCATION: Lat. 54° 05' Long. 128° 43' (103I/2E)
SKEENA M.D. Two and one-quarter miles northwest of the Kitimat bridge, on the eastern slope of Mount Clague, at approximately 300 feet elevation.

CLAIM: JOON 2.
OWNER: Bowbyes Mines Ltd.
OPERATOR: N. ROBAK, 1767 Ingledew Street, Prince George.
METALS: Tungsten, iron, copper, nickel.
WORK DONE: Trenching, 160 feet on Joon 2.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, pp. 498, 499.

BOWBYES (103I-J-104) (Fig. F, No. 8)

LOCATION: Lat. 54° 06' Long. 128° 45' (103I/2E)
SKEENA M.D. Three and one-half miles northwest of the Kitimat bridge, on the eastern slope of Mount Clague near the head of Bowbyes Creek, at approximately 2,500 feet elevation.

CLAIMS: BOWBYES 1 to 16.
OWNER: Bowbyes Mines Ltd.
OPERATOR: N. ROBAK, 1767 Ingledew Street, Prince George.
METALS: Copper, iron, (silver).
WORK DONE: Trenching, 450 feet on Bowbyes 3.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, pp. 498, 499.

LADY LUCK, LUCKY FORTUNE (103I-J-13, 113, 123, 124) (Fig. F, No. 10)

By B. M. Dudas

LOCATION: Lat. 54° 24' Long. 128° 40' (103I/7E)
SKEENA M.D. Approximately 7 miles south of Terrace, on the northeast slopes of Mount Johnson, between White Creek and Lakelse River, at 800 feet elevation.

CLAIMS: LADY LUCK 1 to 40, KENAD 1 to 30, MAYNERS FORTUNE 1 to 8, LUCKY FORTUNE 1 to 8, 17 to 20, GABEL 1 to 36.

OWNER: CREE LAKE MINING LTD., 3003 London House, 505 Fourth Avenue SW., Calgary, Alta.

METALS: Copper, zinc, molybdenum, iron, lead.

DESCRIPTION: The main mineralized area is underlain by Paleozoic sedimentary rocks and greenstone that have been intruded by granodiorite, diorite, and granitic rocks related to the Coast Plutonic Complex. The sedimentary rocks have been altered to skarn. The sulphides are disseminated throughout the altered rocks but are not confined to any particular rock type, nor are they confined to shear zones or veins. The mineralization varies from sparsely disseminated to pods of massive sulphide. The sulphides include pyrite, chalcopyrite, sphalerite, molybdenite, and galena; magnetite forms massive pods and lenses within the skarn.

WORK DONE: Surface diamond drilling, nine holes totalling 1,484 feet on Lady Luck 1, 2, 3, and 4.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 97, 98; 1971, p. 113; 1972, p. 499.

NORTHWEST, SNOW, DF (103I-J-89, 167, 168) (Fig. F, No. 11) By B. M. Dudas

LOCATION: Lat. 54° 29′ Long. 128° 02′ (103I/8E)
OMINECA M.D. Approximately 22 miles east of Terrace, on the southern slope of Treasure Mountain, extending east from Salmon Run Creek to 4,000 feet elevation.

CLAIMS: SNOW 10 to 18, 29 to 36, WB 1 to 22, DF 1 to 8, 12 to 14, 16 to 20.

OWNERS: E. Hudson, W. Lesyk, and R. J. MacNeill.

OPERATOR: SPECTROAIR EXPLORATIONS LIMITED, 518, 510 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: Bornite, chalcocite, and chalcopyrite occur in Hazelton volcanic rocks which have been intruded by granitic rocks of the Coast Plutonic Complex.

WORK DONE: Surface workings surveyed; surface geological mapping and geochemical soil survey, approximately 45 samples covering Snow 11 and 58 samples covering Snow 31; surface diamond drilling, four holes totalling 990 feet on Snow 11.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1914, pp. 118, 119; 1964, p. 48; 1965, pp. 71, 72; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 500 (NORTHWEST; WB).

KOKANEE, J (103I-J-114) (Fig. F, No. 1)

LOCATION: Lat. 54° 40′ Long. 128° 27′ (103I/9W)
OMINECA M.D. Twelve miles north-northeast of Terrace, between Shannon and Lowrie Creeks, from 1,500 to 3,000 feet elevation.

CLAIMS: J 48 to 57, 63 to 67, 69 to 76, 83 to 87, O 5 to 12, K 1, L 1 and 2.

OWNER: Louis Remillong.

OPERATOR: NEW GOLD STAR MINES LTD., Terrace.

METAL: Molybdenum.

DESCRIPTION: The claims are underlain principally by granitic rocks of the Coast Plutonic Complex. Molybdenite occurs erratically over a large area in quartz veins and as disseminations in aplitic intrusive phases.

WORK DONE: The property was drilled by Kokanee Moly Mines Ltd. in 1967 with subcommercial molybdenite grades indicated. In 1971 a geochemical survey was conducted over 6 line-miles covering J 48, 50, 64-67.

REFERENCE: Assessment Report 4298.

REGA, MAG, SEVEN SISTERS, CALEDONIA (103I-J-54, 55, 149, 150) (Fig. F, No. 2)

LOCATION: Lat. 54° 57′ Long. 128° 15′ (103I/16)
OMINECA M.D. Ten miles northeast of Dorreen, on the southern slopes of Seven Sisters Peaks, extending east from the head of Flint Creek.

CLAIMS: REGA 1 to 22, 30 to 38, JACKAL 1 to 6, NIILO 1 to 12, MAG 1 to 39. (The JACKAL 1 to 6 are optioned from Seven Sisters Mining Ltd.)

OWNER: MAGNETRON MINING LTD., 2020, 777 Hornby Street, Vancouver.

METALS: Silver, lead, zinc.

DESCRIPTION: Quartz veins containing galena and sphalerite occur in Bowser sedimentary rocks near a granitic stock underlying Seven Sisters Peaks.

WORK DONE: 1972 – gravity survey at 50-foot intervals along lines 200 feet apart.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 502; Assessment Reports 2016, 3541, 4276.

ETTA (103I-J-155, 170, 171) (Fig. F, No. 3) By B. M. Dudas

LOCATION: Lat. 54° 02′ Long. 130° 25′ (103J/1W)
SKEENA M.D. Twenty miles southwest of Prince Rupert, at Hunt (Jap) Inlet, on the northernmost tip of Porcher Island.

CLAIMS: ETTA 1 to 24, 27 to 62, ZAP 1 to 3.

OWNERS: Yukonadian Mineral Explorations Limited and Hudson Bay Exploration and Development Corporation Limited.

OPERATORS: ANGLO AMERICAN CORPORATION OF CANADA EXPLORATION LIMITED and HUDSON BAY EXPLORATION AND DEVELOPMENT CORPORATION LIMITED, 1695, 555 Burrard Street, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: Most of the property is underlain by northwesterly trending, metamorphosed volcanic and sedimentary rocks of Late Paleozoic to Early Mesozoic age, in contact with a granite stock. Numerous small diorite stocks and dykes also intrude the volcanic and sedimentary rocks. Pyrite, magnetite, chalcopyrite, and sphalerite occur in varying amounts in narrow fracture zones and bedding planes.

WORK DONE: Linecutting; surface geological mapping, 1 inch equals 400 feet; ground magnetometer survey, 66.5 line-miles; and VLF EM survey, 36.1 line-miles covering all claims: test pits and 13 diamond-drill holes totalling 927 feet on Etta 18.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1917, p. 44 (JITNEY); Assessment Report 4401.

NASS RIVER 103P and part of 103O

JJ-C (103P-O-258) (Fig. F, No. 19)

LOCATION: Lat. 55° 44' Long. 130° 05' (103O/9E)
SKEENA M.D. Fourteen and one-half miles south-southwest of Stewart, extending west from Georgie River one-quarter mile north of its junction with the East Georgie River, between 1,000 and 2,000 feet elevation.

CLAIMS: JC 1 to 24, C 1 and 4, JJ 1 and 2.

OWNER: INLAND COPPER LTD., 470 Granville Street, Vancouver.

METAL: Copper.

DESCRIPTION: Andesite is intruded by diorite and altered to greenstone near the contacts. On C 1 and JJ 2 claims, a shear zone follows the contact and contains massive replacement bodies of pyrite, magnetite, chalcopyrite, and minor pyrrhotite.

WORK DONE: Linecutting, approximately 50 miles of grid covering most of JC 1-24; surface geological mapping, 1 inch equals 400 feet covering C 1 and 4, JJ 1 and 2, and JC 24.

REFERENCE: Assessment Report 4820.

MOGUL (103P-O-256) (Fig. F, No. 12)

LOCATION: Lat. 55° 02' Long. 128° 17' (103P/1W)
OMINECA M.D. Two and one-quarter miles northeast of Cedarvale, on the east side of the Skeena River, at 1,000 feet elevation.

CLAIMS: MOGUL 1 and 2.

OWNER: C.L.M. GIGGEY, 601, 5411 Vine Street, Vancouver.

METAL: Molybdenum.

DESCRIPTION: Minor molybdenite occurs in fractures in granitic rocks of the Coast Plutonic Complex.

WORK DONE: Linecutting, approximately 1 mile of grid covering both claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 119; Assessment Report 4248.

BRITISH COLUMBIA MOLYBDENUM MINE (103P-O-120) (Fig. F, No. 13)

By B. M. Dudas

LOCATION: Lat. 55° 26′ Long. 129° 26′ (103P/6W)
SKEENA M.D. Four miles south-southeast of the head of Alice Arm Inlet, on Patsy Creek, the east fork of Lime Creek, at approximately 2,000 feet elevation.

CLAIMS: Mineral Leases M-157 to M-191, including the key claims PATRICIA 1 to 5, and the located claims JAN, JOY, ACCESS, etc., totalling 98.

OWNER: CLIMAX MOLYBDENUM CORPORATION OF BRITISH COLUMBIA, LIMITED, c/o Davis and Company, 1030 West Georgia Street, Vancouver; mine address, Kitsault.

METAL: Molybdenum.

WORK DONE: Climax Molybdenum Corporation of British Columbia, Limited purchased the total assets of British Columbia Molybdenum Limited from its parent company, Kennecott Copper Corporation of New York effective April 1973. No exploration nor development work was done on the property. Most of the efforts were directed toward minimizing further deterioration of Kitsault townsite, mine plant, and equipment.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1964, pp. 30-36; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, pp. 121, 122; 1972, pp. 504-506.

KITSOL (103P-O-257) (Fig. F, No. 14)

By B. M. Dudas

LOCATION: Lat. 55° 41′ Long. 129° 31′ (103P/12E)
SKEENA M.D. Immediately north of the confluence of Evindsen Creek and the Kitsault River, at approximately 1,175 feet elevation.

CLAIMS: KITSOL 1 and 2 (Lots 3814 and 3815).

OWNER: DOLLY VARDEN MINES LTD., 1400, 409 Granville Street, Vancouver 2.

METAL: Silver.

DESCRIPTION: The Kitsol vein, close to and paralleling the Kitsault River, reportedly averaged 10 ounces silver per ton for a 300-foot segment of the vein on the surface. The mineralization includes pyrargyrite, native silver, and marcasite in a quartz - calcite - barite gangue. The host rock is Hazelton Group epiclastic volcanic rocks.

WORK DONE: Trenching, 45 feet on Kitsol vein.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 81-86; 1972, pp. 507, 508.

RED POINT, ROAN ANTELOPE (103P-O-196, 197) (Fig. F, No. 15)

By B. M. Dudas

LOCATION: Lat. 55° 41′ Long. 129° 31′ (103P/12E)
SKEENA M.D. On the west side of the Kitsault River valley, north of Black Bear Creek, at approximately 1,800 feet elevation.

CLAIMS: RED POINT, RED POINT EXTENSION (Lots 3809 and 3810), and ROAN ANTELOPE and ROAN ANTELOPE 1 located claims.

(103P/13W)

OWNER: DOLLY VARDEN MINES LTD., 1400, 409 Granville Street, Vancouver.

METALS: Copper, silver, lead.

DESCRIPTION: On the Red Point Extension the irregular mineralization is called the V vein and consists of a fracture-controlled silicified zone. Silver values were also encountered in the 'Copper Belt' intrusive rocks mineralized with galena, sphalerite, and tetrahedrite. Marcasite was also found in a quartz - barite - calcite gangue.

WORK DONE: Trenching, 30 feet on the V vein.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 81-86; 1972, pp. 507, 508.

RED REEF (103P-O-94) (Fig. F, No. 17)

LOCATION: Lat. 55° 56′ Long. 129° 57′ (103P/13W)
SKEENA M.D. One mile east of Stewart, adjoining the south side of Indian Reserve 19, at approximately 1,500 feet elevation.

CLAIMS: RED REEF 6 to 11, RED REEF 5 Fraction.

OWNER: PRINCEMONT EXPLORATIONS LTD., 210, 890 West Pender Street, Vancouver V6C 1J9.

METALS: Copper, gold.

DESCRIPTION: The Hyder stocks straddle the claims in a northeasterly direction. Most prominent geological feature is the contact between quartz monzonite intrusions due north and Hazelton sedimentary-volcanic contact to the south. A regional fault strikes easterly up Silverado Creek. The rock near showings is garnetite, diopside, biotite skarn. Mineralization consists of pyrite and chalcopyrite.

WORK DONE: Clearing old road for access to property; cleaning and rehabilitation of three caved in adits on Red Reef 5 Fraction and 7.

REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1912, pp. 106, 107; 1928, p. 97; *Geol. Surv., Canada*, Mem. 175, p. 141.

LITTLE JOE, GYPSY (103P-O-68) (Fig. F, No. 16)

By B. M. Dudas

LOCATION: Lat. 55° 58′ Long. 129° 54′ (103P/13W)
SKEENA M.D. Four miles northeast of Stewart, on and extending south from Glacier Creek at 2,400 feet elevation, 2 miles east of Bear River.

CLAIMS: Key claims GYPSY (Lot 416), LITTLE JOE (Lot 873), LUCKY SEVEN (Lot 874) Crown-granted claims plus 19 located claims including RON, VERNE, DORA, ED, etc.

OWNER: STARBIRD MINES LTD., 311, 475 Howe Street, Vancouver.

METALS: Gold, silver, lead, zinc.

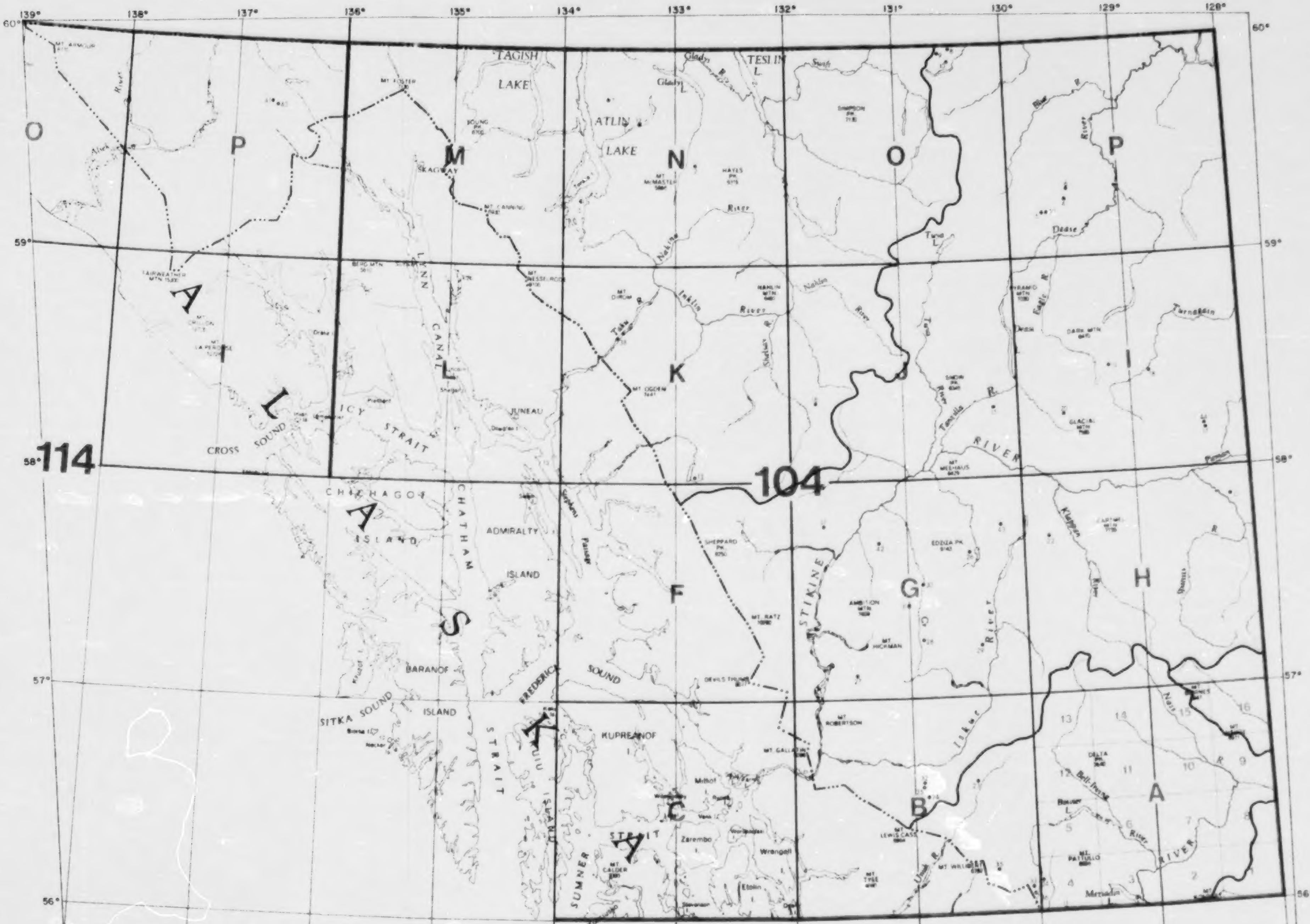
DESCRIPTION:

Vein mineralization on the property lies within thin-bedded dark Bowser graphitic siltstones and greywackes which overlie Hazelton volcanic epiclastics. The sedimentary rocks have been intensely folded and deformed and intruded by a number of plutons and dyke swarms. The veins have been injected into extensive fractures localized near the Bowser-Hazelton contact and apparently controlled by underlying intrusions. The fracture system, which included the known vein mineralization, was referred to as the Portland Canal Fissure Zone in old publications (*B.C. Dept. of Mines & Pet. Res.*, Bull. 58, p. 148).

WORK DONE:	Geological mapping; seven X-ray diamond-drill holes totalling 646 feet and 17 BQX diamond-drill holes totalling 1,616 feet on key claims; approximately 100 feet of hand trenching on the northern ore zone.
REFERENCES:	*Minister of Mines, B.C.*, Ann. Rept., 1910, pp. 71-75; 1913, pp. 92, 93; 1968, p. 53; *B.C. Dept. of Mines & Pet. Res.*, Bull. 58, pp. 147, 148; GEM, 1971, p. 126; 1972, p. 509; *Geol. Surv., Canada*, Mem. 32, pp. 31-36.

RHS (103P-O-7) (Fig. F, No. 18)

LOCATION:	Lat. 55° 59′ Long. 129° 44′ (103P/13E) SKEENA M.D. Ten miles east-northeast of Stewart, at the head of Bitter Creek, at approximately 4,000 feet elevation.
CLAIMS:	RHS 9 to 13, 15, 19, 20.
OWNER:	WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.
METALS:	Molybdenum, gold.
DESCRIPTION:	Molybdenite occurs in a granitic tongue which intrudes calc-silicate rocks.
WORK DONE:	Surface geological mapping, 1 inch equals 50 feet covering RHS 9-13, 15; surface diamond drilling, four holes totalling 201 feet on RHS 9.



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LAKE
SKAGWAY
MT. FOSTER
MT. CANNING
MT. McMASTER
HAYES PK.
SIMPSON PK.
Teslin
Swift
Gladys
L.
Nakina
River
Tuya
L.
Dease
River
Blue
R.
FAIRWEATHER MTN.
MT. CRILLON
LA PEROUSE
BERG MTN.
LYNN
CANAL
MT. NESSELRODE
MT. OGDEN
Inklin
River
Taku
Nahlin
River
NAHLIN MTN.
Sheslay
R.
Tuya
Tanzilla
R.
River
SNOW PK.
PYRAMID MTN.
Eagle
R.
Dease
DARK MTN.
Turnagain
GLACIAL MTN.
MT. MEEHAUS
RIVER
ICY STRAIT
CROSS SOUND
JUNEAU
CHICHAGOF
ISLAND
CHATHAM
ADMIRALTY
ISLAND
Stephens
Passage
SHEPPARD PK.
STIKINE
EDZIZA PK.
AMBITION MTN.
MT. HICKMAN
MT. RATZ
Klappan
Skeena
River
BARANOF
ISLAND
SITKA SOUND
FREDERICK
SOUND
STRAIT
KUPREANOF
I.
KUIU ISLAND
DEVILS THUMB
MT. ROBERTSON
MT. GALLAGHER
Iskut
River
Mitkof
I.
Wrangell
Zarembo
I.
Etolin
I.
MT. CALDER
SUMNER
STRAIT
MT. LEWIS CASS
MT. TYEE
MT. WRIGHT
Unuk
R.
DELTA PK.
Bowser
L.
Bell-Irving
River
MT. PATTULLO
Nass
R.
Meziadin
RIVER
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3
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6
7
8
9
10
11
12
13
14
15
16
Kilometres
50
0
50
100
Miles
20
10
0
20
40
60
80

Figure G INDEX MAP TO PROPERTIES IN NTS GRID DIVISION 104 AND PART OF 114

KEY TO PROPERTIES ON INDEX MAP, FIGURE G.

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NORTHWEST BRITISH COLUMBIA
(NTS Division 104 and part of 114 Figure G)

BOWSER LAKE 104A

ROOSEVELT (104A-69) (Fig. G, No. 11)

By B. M. Dudas

LOCATION: Lat. 56° 02′ Long. 129° 48′ (104A/4W)
SKEENA M.D. Near the junction of Bitter Creek and Roosevelt Creek, about 10 miles northeast of Stewart.

CLAIMS: Thirty Crown-granted claims including the MORGAN, LEAD COIL, ALBERTA, CREEK, RADIO, ORE HILL, PONTIAC, ROOSEVELT, NORTHERN BELL, MAYOU, Mineral Lease M-147, and TERRY 1 to 55.

OWNERS: Crest Silver Company Limited and Ardo Mines Ltd.

OPERATOR: ARDO MINES LTD., 210, 890 West Pender Street, Vancouver.

METALS: Copper, gold, silver, lead, zinc (production shown in Table I).

DESCRIPTION: In the Silver adit the mineralization is associated with lenticular quartz-breccia veins of variable width and extent. The wallrock is mainly thinly banded graphitic siltstone which locally comprises part of the thick Middle Jurassic Salmon River Formation.

WORK DONE: The Silver adit was reopened in May and worked by two men for two months to remove the ore stockpiled during 1972. The ore was trucked to the Adam mill, some 4 miles distance. On account of the narrow, irregular veins, the dilution was great and the ore became uneconomical. The mine closed in July and all surface buildings were removed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 512.

RED CLIFF (104A-37) (Fig. G, No. 34)

By E. W. Grove and B. M. Dudas

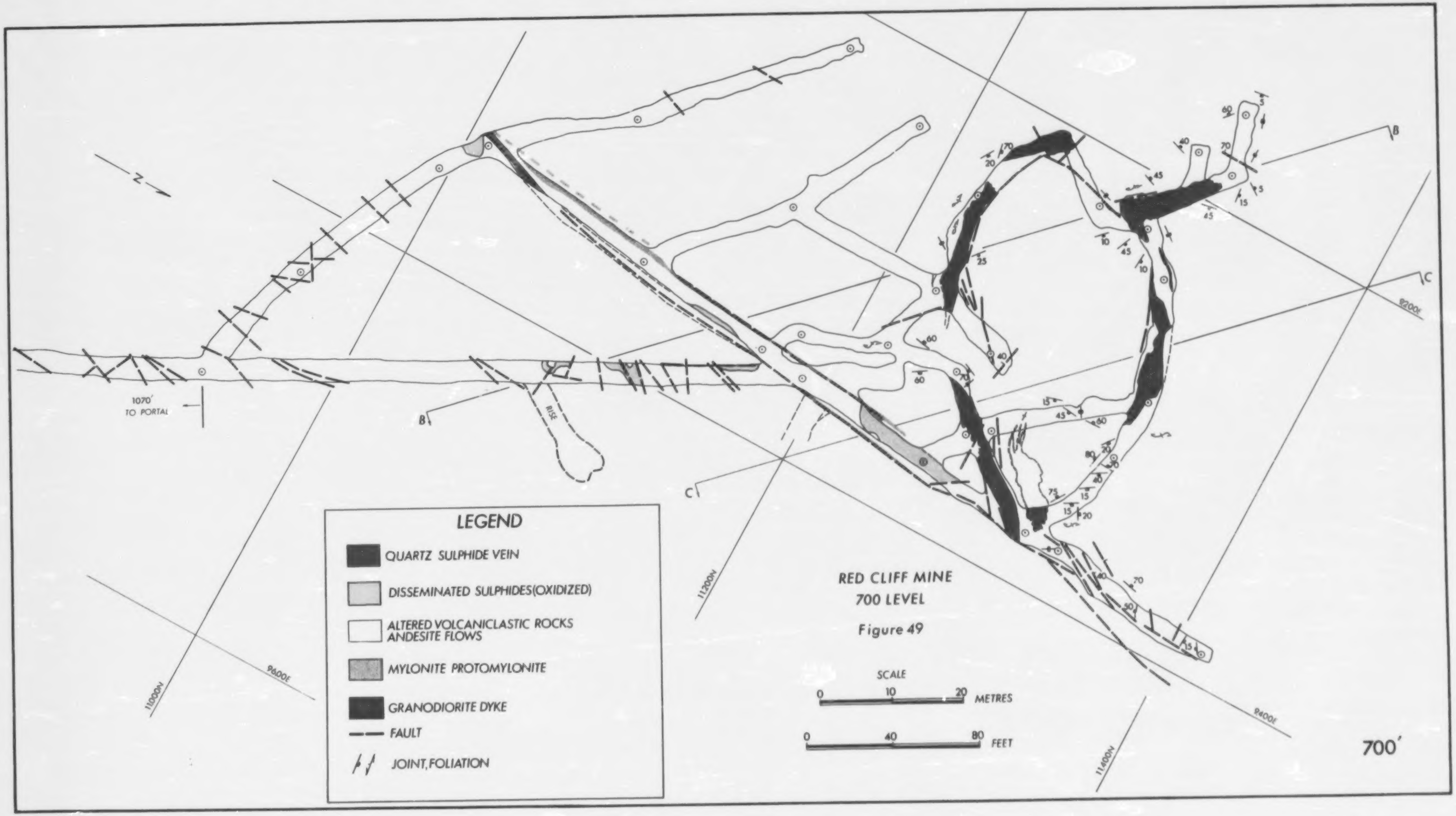
LOCATION: Lat. 56° 10′ Long. 129° 59′ (104A/4W)
SKEENA M.D. One mile from the Stewart-Cassiar Highway near the junction of American Creek and Bear River, between 600 and 1,000 feet elevation.

CLAIMS: MOUNT LYELL and LITTLE PAT FR. (Lots 77, 78), DOT FR. and LAST CHANCE (Lots 87, 88), BIG CASINO, JACK OF CLUBS, LOOKOUT FR., LITTLE CASINO, and OURAY FR. (Lots 4529 to 4533).

OWNER: International Mogul Mines Limited (formerly Yale Lead & Zinc Mines Limited).

OPERATORS: ADAM MILLING LTD. and CITEX MINES LTD., 210, 890 West Pender Street, Vancouver; mine address, Box 370, Stewart; C. T. Pasieka, manager.

METALS: Copper, gold, silver (production shown in Table I).



RED CLIFF MINE
700 LEVEL
Figure 49

LEGEND
QUARTZ SULPHIDE VEIN
DISSEMINATED SULPHIDES(OXIDIZED)
ALTERED VOLCANICLASTIC ROCKS
ANDESITE FLOWS
MYLONITE PROTOMYLONITE
GRANODIORITE DYKE
FAULT
JOINT, FOLIATION
SCALE
0 10 20 METRES
0 40 80 FEET
N
1070' TO PORTAL
RISE
B
B
C
C
11000N
11200N
11400N
9600E
9400E
9200E
700'

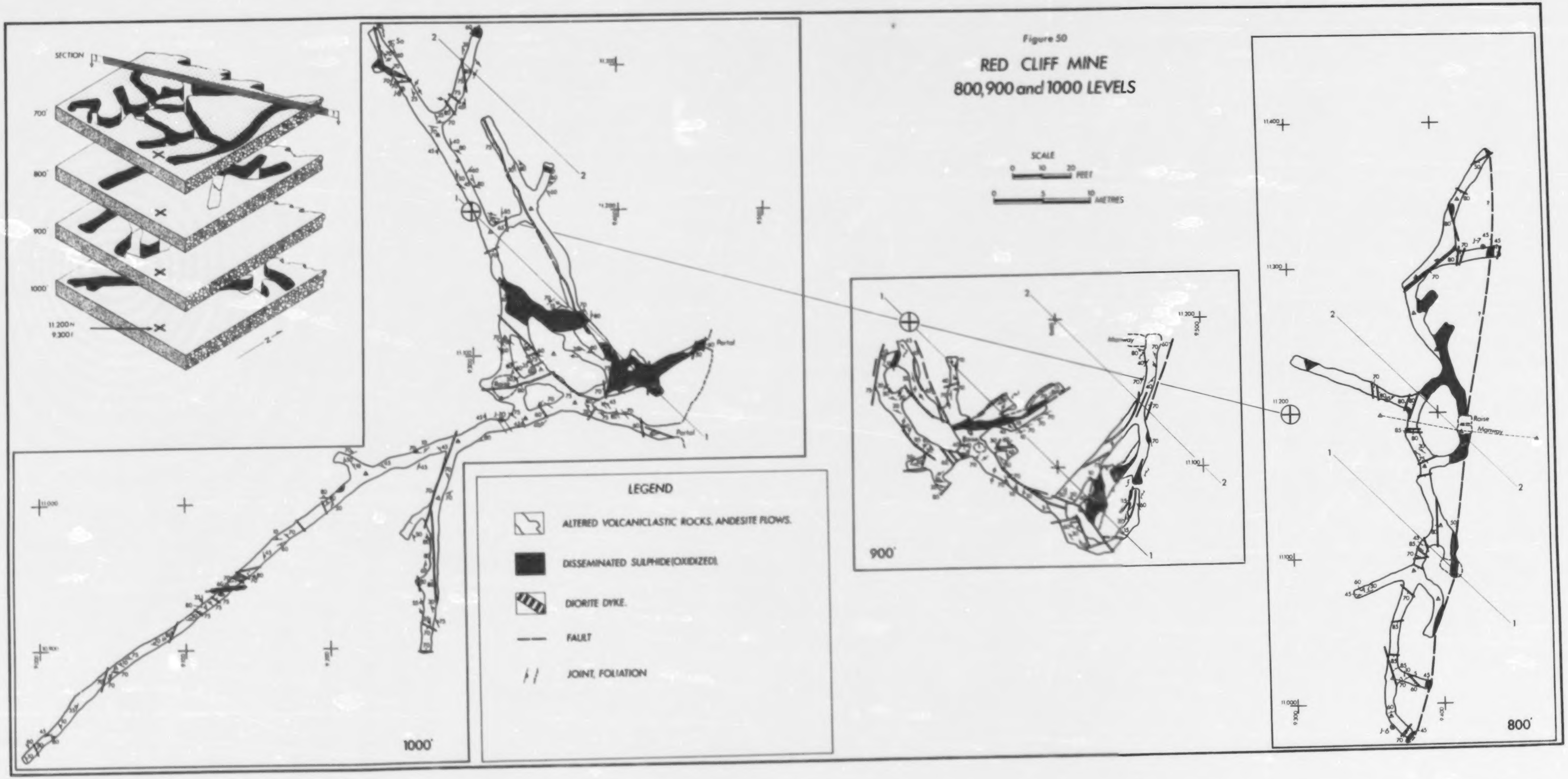


Figure 50

RED CLIFF MINE

800,900 and 1000 LEVELS

SECTION
700'
800'
900'
1000'
11,200 N
9,300 E
Portal
Portal
Manway
Raise
Manway
SCALE
0 10 20 FEET
0 5 10 METRES
LEGEND
ALTERED VOLCANICLASTIC ROCKS, ANDESITE FLOWS.
DISSEMINATED SULPHIDE(OXIDIZED).
DIORITE DYKE.
FAULT
JOINT, FOLIATION
1000'
900'
800'

DESCRIPTION:

GEOLOGICAL SETTING: Country rocks in the mine area include part of a thick sequence of well-bedded red and green volcanic sandstones and conglomerates intercalated with irregular, porphyritic andesite flows. These upper Lower Jurassic units lie on the west limb of the American Creek anticline, and are overlain by volcaniclastic rocks of the lower Middle Jurassic Bitter Creek Formation. The stratified sequence has been transected by the extensive, northwesterly trending, Tertiary, Portland Canal dyke swarm which lies immediately south of the mine area. The country rocks have been extensively fractured and deformed locally. The lower part of Lydden Creek has been eroded along a northerly trending, west-dipping cataclasite zone which represents an extension of the main Bear River cataclasite zone. The Red Cliff workings and all the known mineralization lie structurally above the Lydden Creek zone.

MINE GEOLOGY: In the mine area the country rocks include highly altered and sheared green andesitic volcanic conglomerates, red feldspathic sandstones, minor argillaceous siltstone, and variably porphyritic thin andesite flows. Primary sedimentary structures indicate that the local sequence trends northerly and dips westward at about 70 degrees. Locally these stratified units have been extensively cataclastically deformed producing intersecting sets of shears represented at the mine by narrow altered semi-schist, proto-mylonite, and mylonite. These zones and the less deformed rocks have been offset by younger, northerly trending faults.

The ore which occurs as lenses within the shear zones consists largely of coarse-grained milky quartz as veins containing pods, lenses, and streaks of pyrite and chalcopyrite which are the dominant sulphide minerals. Other mineralization, also largely confined to the shear zones, comprises disseminated pyrite and chalcopyrite with minor quartz. Pyrite is also common within the younger fault breccia zones and along the younger fault planes. Rock alteration in the various mineralized and other shears consists mainly of sericite and carbonate with superimposed carbonate-quartz as veinlets and segregations.

The geologic plans and sections (Figs. 49, 50, and 51) illustrate the relationship between the old workings, the known mineralizations, and the rock structures. The Lydden Creek fault has truncated the ore zone below 700 level thereby limiting any extension of the known mineralization to depth. As shown by the geologic sections of the old mine, development above 700 level has been on the hangingwall of the fault, but east of the apparent projection of the 700 level ore-grade mineralization. The potential upper limits of the known ore zone is the present rock surface.

WORK DONE:

The mine reopened in April and the 700 level was rehabilitated. The exposed ore in the drift backs was open stoped and endangered the safe removal of additional ore on that level. Production ceased in September. Diamond drilling was carried out during November and the mine closed for the winter in December. The ore produced and the old dump from the 1930's were trucked to the Adam mill on Bitter Creek, some 8 miles distance.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1959, p. 8; *Geol. Surv., Canada,* Mem. 32, pp. 47-50.

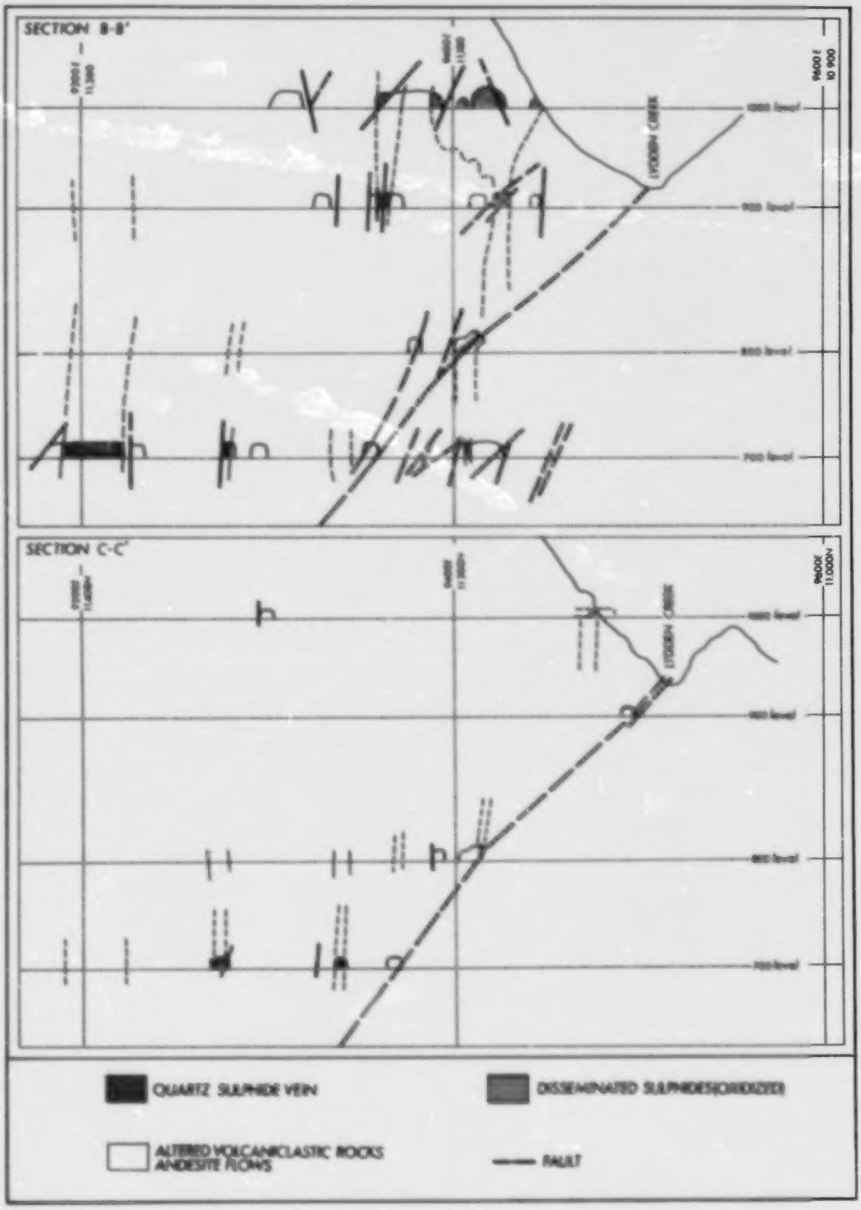

SECTION B-B'
1000 level
900 level
800 level
700 level
LYDDEN CREEK
SECTION C-C'
1000 level
900 level
800 level
700 level
LYDDEN CREEK
QUARTZ SULPHIDE VEIN
DISSEMINATED SULPHIDES(OXIDIZED)
ALTERED VOLCANICLASTIC ROCKS
ANDESITE FLOWS
FAULT

Figure 51. Red Cliff, sections B-B' and C-C'.

SALMON (GLACIER) (104B-112) (Fig. G, No. 36)

LOCATION: Lat. 56° 05′ Long. 130° 02′ (104B/1E)
SKEENA M.D. Twenty miles by road north from Stewart; property straddles the Granduc road.

CLAIMS: Mineral Leases M-394 (KNOB HILL, BOSTON FRACTION, BEAN FRACTION, BOSTON FRACTION NO. 2, BOUNDARY NO. 4, GLACIER, GLACIER NO. 1, GLACIER NO. 2); M-305 (PACKERS FRACTION); M-306 (DAUNTLESS).

OWNER: COBRE EXPLORATION LIMITED, 254 East Fourth Street, North Vancouver.

METALS: Copper, lead, zinc, silver, gold.

DESCRIPTION: Deformed Hazelton Group siltstones and epiclastic volcanic rocks have been intruded by the Middle Jurassic Texas Creek pluton and Tertiary dykes. Mineralization consists of numerous flat-dipping quartz-carbonate veins and veinlets containing chalcopyrite, sphalerite, galena, and tetrahedrite which are present in siltstone and tuff above the contact with the Texas Creek pluton.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet and 1 inch equals 100 feet covering Knob Hill, Boston Fraction No. 2, and Bean Fraction; geochemical rock chip survey, 70 samples, 1.2 line-miles covering same claims.

REFERENCE: *Geol. Surv., Canada,* Mem. 175, p. 158.

MARTHA ELLEN (BIG MISSOURI) (104B-46, 92) (Fig. G, No. 33)

LOCATION: Lat. 56° 07′ Long. 130° 01′ (104B/1E)
SKEENA M.D. Five miles north of the Silbak Premier mine, at approximately 3,500 feet elevation.

CLAIMS: PROVINCE, HERCULES, MARTHA ELLEN, LECKIE FR. Crown-granted claims.

OPERATOR: CONSOLIDATED SILVER BUTTE MINES LTD., 705, 850 West Hastings Street, Vancouver.

METALS: Gold, silver, lead, zinc, copper.

DESCRIPTION: Sulphide-bearing quartz veins, lenses, and stockwork are localized by minor fold structures within altered Lower Jurassic tuffaceous medium-grained volcanic epiclastic rocks.

WORK DONE: Topography mapped; surface geological mapping covering the Province claim.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 513; *B.C. Dept. of Mines & Pet. Res.,* Bull. 58, pp. 124-127.

GRANDUC MINE (104B-21) (Fig. G, No. 35) By B. M. Dudas

LOCATION: Lat. 56° 13′ Long. 130° 21′ (104B/1W)
SKEENA M.D. The mine is at the head of the Leduc River, 25 miles north-northwest of Stewart, between 1,800 and 4,000 feet elevation. The concentrator and campsite are at Tide Lake. The townsite is at Stewart.

(104B/1W)

CLAIMS: One hundred and sixty-four Crown-granted and 186 located claims.

OWNER: Granduc Mines, Limited.

OPERATOR: GRANDUC OPERATING COMPANY, 520, 890 West Pender Street, Vancouver; mine address, Box 69, Stewart; R. S. Mattson, resident manager.

METALS: Copper, silver (production shown on Table I).

DESCRIPTION:

In summary, the mineral occurrence is within a cataclasite zone in a metamorphosed succession of volcanic and sedimentary rocks of Lower Jurassic age which form part of the Unuk River Formation. These rocks which now comprise cataclasites, mylonites, and phyllonites are overlain on the east by easterly dipping volcanic conglomerates, thick pillow volcanic units, and minor intercalated sedimentary rocks. It is about 3 miles east of the easterly contact of the Coast Plutonic Complex.

Chalcopyrite, along with pyrite, pyrrhotite, and sphalerite, occurs as streaks, blebs, and irregular massive lenses within the phyllonite-mylonite zone. The ore zone extends at least 2,500 feet vertically and 4,000 feet laterally.

WORK DONE:

The basic method of mining is sublevel cave, however, during the year block cave and mechanized cut-and-fill mining methods were being evaluated. Transverse sublevel cave production was phased out on 3140 sublevel in No. 1 block in favour of multilongitudinal sublevel cave which is also the method used in No. 2 block.

Longhole drilling units are used for both development and production mucking. Two and three-boom development jumbos are used for drilling the development headings, and two-boom fan jumbos are used for drilling the production up-holes.

The total underground development for the year was 60,010 feet. Drifts, crosscuts, and service ramps for trackless development was 56,091 feet. Slot and miscellaneous raising was 771 feet. Bored raising was 3,148 feet and miscellaneous excavations in waste amounted to 71,337 cubic feet. Underground diamond drilling for ore definition totalled 35,498 feet.

At year end, No. 1 block was producing from the 3110, 3065, and 3020 levels with development continuing on 2975, 2930, and 2795 levels. In No. 2 block, 3530, 3485, and 3435 levels were producing levels and 3255, 3210, and 3110 levels were being developed. There was no exploration work carried out, however, the underground diamond drilling programme continued to define the ore zones in the development areas of the mine.

The method of concentration is to crush to 50 per cent minus ½-inch, feed to rod mills for primary grinding, then to pebble and ball mills for secondary grinding. The pebble and ball mill discharge at 60 per cent minus 200 mesh, then passes through flotation, thickening, filtering, and drying processes. The concentrator throughput was improved from an average of 5,725 tons per day in 1972 to 7,666 tons per day in 1973.

The intake fan installation at the Tide end of the haulage tunnel was completed and made operational.

During the year, Pollution Control Permits were applied for to cover emissions to atmosphere and refuse dumps.

A five-man snow control team is employed during the winter months to supervise snow removal and avalanche protection on the 32-mile road between the concentrator site and Stewart and at the mine portals at Leduc.

Total manpower at December 31, 1973 was 811 including contractors. Of this total 501 were employed underground and 310 were employed on surface.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 68-70; 1971, pp. 34, 35; 1972, pp. 514, 515.

SIB (104B-8?) (Fig. G, No. 23)

LOCATION: Lat. 56° 37' Long. 130° 29' (104B/9W)
SKEENA M.D. Three miles easterly from the south end of Tom Mackay Lake, at approximately 3,600 feet elevation.

CLAIMS: SIB 1 to 16.

OWNER: CONSOLIDATED SILVER BUTTE MINES LTD., 705, 850 West Hastings Street, Vancouver.

METALS: Gold, silver, lead, zinc, copper.

WORK DONE: Road construction, 12,000 feet (bulldozer trail); stripping, 100 feet by 1,150 feet on SIB 16.

REFERENCE: *Minister of Mines, B.C.*, Ann. Rept., 1946, p. 85.

KAY, TOK (104B-8?) (Fig. G, No. 23) By B. M. Dudas

LOCATION: Lat. 56° 37' Long. 130° 28' (104B/9W)
SKEENA M.D. About 1.5 miles east of Tom Mackay Lake, on the easterly slope of Prout Plateau, between 3,500 and 3,700 feet elevation.

CLAIMS: KAY 11 to 18, TOK 1 to 22.

OWNER: Stikine Silver Ltd.

OPERATOR: KALCO VALLEY MINES LTD., 604, 744 West Hastings Street, Vancouver.

METALS: Silver, gold, lead, zinc.

DESCRIPTION: Various stratified units forming part of a thick Lower Jurassic sequence underlie the claims. Mineralization is localized within deformed pebble and boulder conglomerates in which sphalerite forms the matrix. The sulphide zones have been cut by stockwork-like quartz-sulphide zones in which gold and silver-bearing tetrahedrite is present.

WORK DONE: The surface geology of the claims was mapped at a scale of 1 inch equals 40 feet. Six diamond-drill holes totalling 983 feet were drilled in the mineralized zones to test for continuity of gold-bearing structure.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, pp. 64, 65; 1971, p. 36; 1972, pp. 516, 517.

PINS (104B-111, 115) (Fig. G, No. 24)

LOCATION: Lat. 56° 33' Long. 130° 50' (104B/10W)
LIARD M.D. South-southeast of the junction of Snippaker Creek and the Iskut River, at approximately 4,200 feet elevation.

CLAIMS: PINS 1 to 40.

OWNER: COBRE EXPLORATION LIMITED, 254 East Fourth Street, North Vancouver.

METALS: Copper, lead, zinc.

DESCRIPTION: Andesite lava, tuff, and agglomerate and minor rhyolite lava have been intruded by dykes and small irregular masses of diorite porphyry and andesite porphyry. The andesite has been extensively propylitized and all rocks but the andesite porphyry have been more or less pyritized. Chalcopyrite, malachite, and limonite are finely disseminated in altered andesite over an area of 15 by 50 feet on Pins 13, and a few quartz veins in andesite and rhyolite contain small amounts of chalcopyrite, galena, and sphalerite.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Pins 1-4; geochemical soil survey, 43 samples, 1.3 line-miles covering Pins 3 and 4; magnetometer survey, 3.2 line-miles covering Pins 1-12; horizontal-loop EM survey, 4.6 line-miles covering Pins 1-12.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 517; Assessment Reports 4748, 4749.

TAMI, KIM (104B-23?) (Fig. G, No. 25)

By B. M. Dudas

LOCATION: TAMI –
Lat. 56° 35.3'-37' Long. 130° 50'-52.5' (104B/10W)
KIM –
Lat. 56° 31.5' Long. 130° 42.5' (104B/10W)
LIARD M.D. Six miles (Tami) and 14 miles (Kim) south of junction of Snippaker Creek and Iskut River, 88 miles south of Telegraph Creek.

CLAIMS: TAMI 1 to 36, KIM 1 to 36.

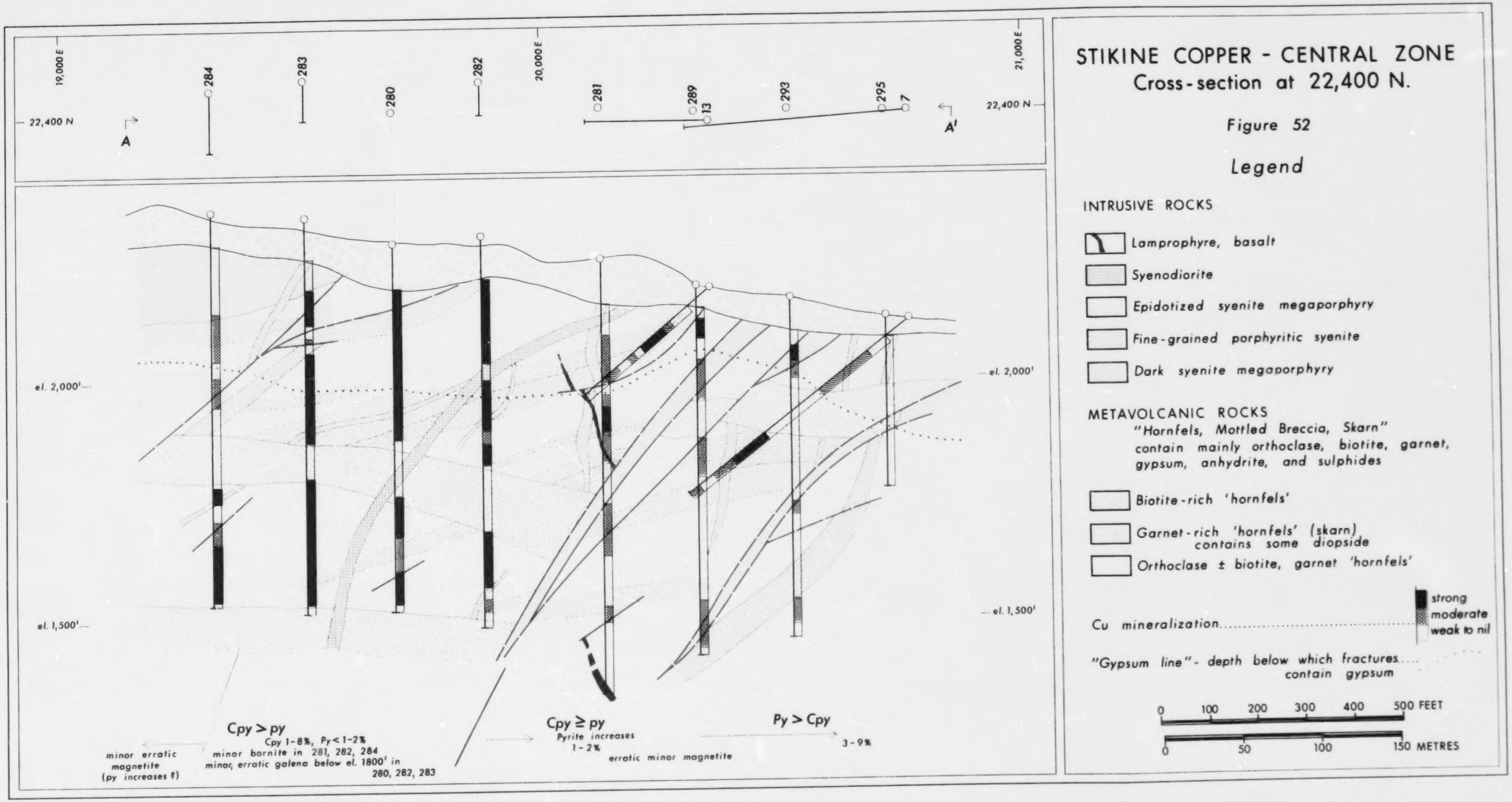
OWNER: GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD., 736 Eighth Avenue SW., Calgary, Alta.

METALS: Copper, lead.

DESCRIPTION: Upper Triassic and Lower Jurassic tuffs and pyroclastic rocks have been intruded by quartz diorite and felsite plutons. Pyrite, chalcopyrite, and galena have been observed.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; geochemical soil survey, 98 samples, 4 line-miles covering Kim 13-22 and 26.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 517.



STIKINE COPPER - CENTRAL ZONE
Cross-section at 22,400 N.

Figure 52

19,000 E
20,000 E
21,000 E
22,400 N
284
283
280
282
281
289
13
293
295
7
A
A'
el. 2,000'
el. 1,500'
Cpy > py
Cpy 1-8%, Py < 1-2%
minor bornite in 281, 282, 284
minor, erratic galena below el. 1800' in 280, 282, 283
minor erratic magnetite (py increases ?)
Cpy ≥ py
Pyrite increases
1-2%
erratic minor magnetite
Py > Cpy
3-9%
Legend
INTRUSIVE ROCKS
Lamprophyre, basalt
Syenodiorite
Epidotized syenite megaporphyry
Fine-grained porphyritic syenite
Dark syenite megaporphyry
METAVOLCANIC ROCKS
"Hornfels, Mottled Breccia, Skarn" contain mainly orthoclase, biotite, garnet, gypsum, anhydrite, and sulphides
Biotite-rich 'hornfels'
Garnet-rich 'hornfels' (skarn) contains some diopside
Orthoclase ± biotite, garnet 'hornfels'
Cu mineralization
strong
moderate
weak to nil
"Gypsum line" - depth below which fractures contain gypsum
0
100
200
300
400
500 FEET
0
50
100
150 METRES

INEL (104B-113) (Fig. G, No. 32)

LOCATION: Lat. 56° 41′ Long. 130° 57′ (104B/10W)
LIARD M.D. Sixty miles northwest of Stewart and 5.5 miles southeast of the confluence of Bronson Creek and Iskut River, between 4,000 and 6,000 feet elevation.
CLAIMS: INEL 7 to 72, HIHO 1 to 16.
OWNER: Skyline Explorations Ltd.
OPERATOR: ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.
METALS: Copper, zinc, gold, molybdenum, lead, silver.
DESCRIPTION: The claims are underlain mainly by volcanic and sedimentary rocks of Upper Triassic and Lower Jurassic age. These have been intruded by a pluton of quartz monzonite to the east, by a dyke of quartz porphyry and a diorite dyke, by a small mass of orthoclase porphyry, and by numerous dykes of rhyolite explosion breccia. A shattered zone near the centre of the claim area has been injected by numerous quartz veins carrying abundant pyrite and sphalerite and minor chalcopyrite. North of this zone lapilli tuff contains a stratiform zone of banded pyrite and sphalerite which is 2 to 18 feet wide.
WORK DONE: Surface geological mapping, 1 inch equals 200 feet and 1 inch equals 1,000 feet covering all claims; magnetometer survey, 8 line-miles and vertical-loop EM survey, 5 line-miles covering Inel 43, 45, 47, 60, 62, and 64; trenching, 551 feet on Inel 46, 47, 48, 58, and 59.
REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 518; Assessment Report 4732.

TELEGRAPH CREEK 104G

GC, HAB, BUY (STIKINE COPPER) (104G-16) (Fig. G, No. 27)

By A. Panteleyev

LOCATION: Lat. 57° 07′ Long. 131° 27′ (104G/3W)
LIARD M.D. At the headwaters of Galore Creek, a tributary of the Scud River, at approximately 2,400 feet elevation.
CLAIMS: GC, HAB, BUY, XGC, OB, ARCHIE, and SK, totalling 255 located claims and 39 fractions.
OWNER: Stikine Copper Ltd.
OPERATOR: HUDSON BAY MINING AND SMELTING CO., LIMITED, Box 28, Toronto-Dominion Centre, Toronto, Ont.
METALS: Copper, minor gold, silver.
DESCRIPTION:

Ten zones with economically significant copper mineralization have been discovered in metavolcanic and intrusive rocks of the Galore Creek syenite complex. Investigation of the largest zone, the Central zone, resumed in 1972 and a detailed description with references to earlier work is given in *Geology, Exploration, and Mining in British Columbia, 1972,* pages 520 to 526.

During 1973, 53 diamond-drill holes were completed in the Central zone, mainly north of Dendritic Creek, and 7 holes were drilled in the North Junction zone. Drilling in the Central zone was designed to fill in and also to expand reserves by testing for extensions beyond inferred boundaries of mineralization. Holes were drilled in the North Junction zone to supplement existing data so that surface mapping, underground observations, and drill information from the structurally complex mineralized area could be correlated and interpreted.

Based on drilling to 1974, the company announced drill indicated reserves of 59 million tons with 1.2 per cent copper in the South Central zone and an estimated 79 million tons with 1.0 per cent copper in the North Central zone. Cutoff grade was set at 0.6 per cent copper with credit for some gold and silver.

A geological cross-section across the approximate middle of the Central zone is shown on Figure 52. The section, which is about 2,500 feet north-northeast along strike from the cross-section in the South Central zone illustrated and discussed in *Geology, Exploration, and Mining in British Columbia, 1972,* is approximately 150 feet north of Dendritic Creek, and passes through the northern part of the proposed initial pit in the area where mineralization is developed over its maximum known width. The western boundary of the cross-section is about 1,500 feet east of the main syenite body that forms the Galore Creek syenite complex.

Compared to the South Central zone, rocks in the Central zone immediately north of Dendritic Creek show several significant differences in lithology, mineralization, and structure, the most obvious of which is in the character of mineralized metavolcanic rocks. The latter have traditionally been called 'hornfels' and the terminology will be kept for sake of continuity although it is a misnomer as there most assuredly has been considerable metasomatism and skarn might be a more appropriate term. The dominant rock type in the South Central zone is dark-coloured, biotite hornfels derived from massive andesite flow and volcaniclastic rocks. Only one relatively thin unit of garnet-bearing orthoclase-rich hornfels was mapped, and it contains a number of interbedded members of distinctive biotite-rich lapilli tuff or breccia. North of Dendritic Creek, garnet-bearing orthoclase-rich rocks are most abundant, and only a few thin beds of biotite hornfels are present.

Texturally, metavolcanic rocks in the Central zone vary from fine-grained, orthoclase-rich hornfels derived from massive, fine-grained to weakly porphyritic trachyte flows or sills, to coarse porphyroblastic, mottled hornfels. Coarse-grained, mottled hornfels contain relict porphyroblasts of pseudoleucite and phenocrysts of feldspar up to 2 centimetres in size in a grey to pink, very fine, granular feldspathic matrix. Mottling is due to replacement of phenocrysts and porphyroblasts by biotite, garnet, anhydrite, and sulphide minerals to produce clots or patches of dark-coloured minerals in a light grey to pink, massive, fine-grained matrix.

Stratification is defined by mineralogical differences and variations in proportions of orthoclase, garnet, and biotite that probably reflect original compositional differences in the volcanic succession. Orthoclase is the most abundant mineral whereas garnet constitutes as much as 25 per cent of certain beds. Locally, diopside is associated with garnet-rich zones and these rocks may therefore be called skarn. Diopside-bearing garnetiferous skarn units, however, do not show any appreciable increase in magnetite, carbonate, nor sulphide content and the rocks appear to be derived from volcanic rocks rather than calcareous clastic rocks. In fact, sulphide content commonly displays an inverse relationship to garnet (and diopside) and is more directly related to biotite content. When garnet and biotite-rich drill intercepts and orthoclase hornfels zones are projected between drill holes, the rocks appear to form a well-bedded succession of apparently gently westward-dipping trachyte or phonolite flows, flow breccia, and possibly sills with intercalated greywacke or andesitic tuff members.

The main intrusive masses are three 75 to 150-foot-thick subhorizontal sheets of coarse syenite porphyry that are similar in size and shape to those to the south. In contrast to the South Central zone, epidotized syenite megaporphyry is the dominant intrusive type and forms two of the largest intrusive bodies; dark syenite porphyry forms the other major syenite body and no garnetiferous syenite megaporphyry was recognized. Fine-grained porphyritic syenite occurs in thin, steeply dipping dykes that intrude dark syenite porphyry but are clearly cut by epidotized syenite megaporphyry. All syenite bodies, with the possible exception of one thin dark syenite unit, are slightly transgressive to bedded rocks and may, therefore, be classed as subhorizontal dykes rather than sills.

Tectonic and intrusive breccias that have been particularly important in the South Central zone for localizing copper mineralization and possibly controlling distribution of bornite, are not significant in controlling sulphide distribution in mid-Central zone (Fig. 52). Breccias in this part of the zone are related to faults and postdate sulphide mineralization. In these fault zones mineralized rocks have been strongly fractured, crushed, and sheared to produce much gouge. The largest faults are found along the eastern boundary of mineralization and form a highly fractured footwall for the main mineralized zone. The faults dip westerly at about 30 to 50 degrees and display normal movement with apparent throws of about 500 feet. A subhorizontal, closely spaced fracture cleavage that is well developed near surface in the South Central zone is also seen in rocks north of Dendritic Creek.

Sulphide mineralization north of Dendritic Creek consists largely of chalcopyrite with subordinate pyrite and only traces of bornite. Chalcopyrite is found almost exclusively in metavolcanic rocks and occurs as coarsely disseminated, discrete granules and patches in mafic-rich beds or with mafic clots in orthoclase-rich beds. Bornite occurs as rare, small grains in the core of the zone of copper mineralization. Pyrite content increases along the eastern boundary and in the faulted footwall of the copper zone. Pyritic rocks probably flank and underlie copper mineralization as a pyritic halo. The strong zoning pattern evident in the South Central zone is not obvious in the section examined (Fig. 52) but the same manner of sulphide zoning is indicated. Bornite is present in the centre of the mineralized zone together with abundant chalcopyrite and only trace amounts of pyrite. Chalcopyrite is the most abundant and widespread sulphide mineral in the zone of copper mineralization and is greatly in excess of pyrite. Along the flanks of the chalcopyrite-bearing zone, pyrite increases progressively outward from the core and chalcopyrite content decreases quite abruptly. Magnetite is distributed as sparse, fine disseminated grains that may increase in abundance in the pyritic zone but does not show any preferential development along any particular strata.

In contrast to the fine-grained, evenly disseminated, chalcopyrite-bornite mineralization found in biotite hornfels and brecciated dark syenite porphyry in the South Central zone, mineralization north of Dendritic Creek consists dominantly of chalcopyrite associated with erratic patches of biotite and biotite-garnet in texturally distinctive, coarsely granular, potassic metavolcanic rocks.

(104G/7W)

WORK DONE:

Sixty NQ diamond-drill holes totalling 48,963 feet were drilled in the main mineralized zone. The permanent camp buildings are suitable for 32 persons; thus, it was necessary to utilize tents to handle the additional personnel. In addition, four permanent core sheds were constructed. A 1,500-foot-long airstrip suitable for Otter aircraft was maintained near the camp. Another airstrip, 5,000 feet long, suitable for larger aircraft was kept in good repair at the junction of the Stikine and Scud Rivers. All the supplies had to be airlifted from either airstrips thus, a 206 Jet Ranger helicopter was on the property for the entire exploration season.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1965, pp. 19-24; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, pp. 520-526.

By A. Panteleyev

RUN (104G-40) (Fig. G, No. 28)

LOCATION: Lat. 57° 18′ Long. 130° 55′ (104G/7W)
LIARD M.D. Five miles southeast of Schaft Creek landing strip, east side Mess Creek, between 2,400 and 4,750 feet elevation.

CLAIMS: MIX 1 to 72 (formerly RUN, HOT PUNCH, and TIA MARIA).

OWNER: Wharf Resources Ltd.

OPERATOR: PHELPS DODGE CORPORATION OF CANADA, LIMITED, 404, 1112 West Pender Street, Vancouver V6E 2S1.

METALS: Copper, molybdenum.

DESCRIPTION:

Rusty weathering rocks with pyrite, minor chalcopyrite, and traces of molybdenite are found in a large alteration zone adjacent to Mess Creek. A low-lying area bounded by the most intensely altered rock was tested by diamond drilling below the zone of oxidation and surficial limonitic carbonate alteration.

The bedded rocks are steeply dipping, dark grey to green, massive fine-grained to weakly porphyritic, pyroxene-bearing flows, flow breccias, and a few 1 to 20-foot-thick, intercalated units of thinly bedded siltstone, all of apparent Upper Triassic age. Intrusive rocks are feldspar porphyry dykes, commonly 5 to 20 feet thick, that comprise up to 25 per cent and more of the succession. Two stages of similar-looking feldspar porphyry were recognized on the basis of crosscutting relationships. The older porphyry is grey, strongly sericitized, pyritic rock that is greatly subordinate relative to the main intrusive phase. The main feldspar porphyry is a mafic-poor, sparsely porphyritic rock containing about 25 per cent seriate, fine to medium-grained, pink plagioclase phenocrysts in a light brown aphanitic matrix. Analysis of the rock showed 58 per cent SiO_2, 10.2 per cent alkalis, and high concentrations of the minor elements Ba, Sr, and Rb so that the rock may be classified as a syenite or trachyte. Similar feldspar porphyry and pyritic felsite intrusions in the eastern Telegraph Creek map-area have been shown to be Late Cretaceous to Early Tertiary in age (Souther, 1972).

Sulphide minerals are present, mainly in feldspar porphyries, as disseminated pyrite ranging in amount from trace to 3 per cent, and in volcanic rocks as fracture controlled chalcopyrite associated with fine-grained to patchy magnetite. Molybdenite is seen sporadically on slip and fracture selvages and in thin quartz veinlets in fractured feldspar porphyries and volcanic rocks. The best copper and molybdenum mineralization is developed in steeply dipping fracture and breccia zones, possibly related to faults of the Mess Creek fault system, in an area of feldspar porphyry intrusions. At least two stages of fracturing were recognized; early fractures are mineralized and accompanied by sericite-chlorite alteration and quartz-bearing, carbonate fracture-filling containing some barite and gypsum, whereas younger fractures have carbonate gangue and only traces of pyrite.

WORK DONE: Reconnaissance surface geological mapping, 1 inch equals 400 feet covering 13-18, 21, 23, 25, and 27; frequency-domain IP survey, 12.6 line-miles covering Mix 13-18, 21-26, 33-38, 42-44, 46, 51, 52, 54, 56, 59, 61, and 65; reconnaissance geochemical soil survey, 73 samples, 2.4 line-miles covering Mix 4, 6, 13-17, 23, and 25; linecutting covering Mix 2, 4, 6, 13-18, 23, 25, 27, 54, 56, 58, and 65.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, pp. 529, 530; Souther, J.G., 1972, Telegraph Creek Map-area, British Columbia, *Geol. Surv., Canada,* Paper 71-44, 38 pp.; Assessment Reports 4100, 4755.

LIARD COPPER (BIRD, SNO) (104G-15) (Fig. G, No. 31)

By B. M. Dudas

LOCATION: Lat. 57° 25′ Long. 131° 00′ (104G/6E, 7W)
LIARD M.D. Six miles southwest of Mess Lake, between 2,800 and 4,000 feet elevation.

CLAIMS: BIRD, SNO, BB, BUD, EMU, GAV, ID, MESS, NOV, PIT, RUM, SUE, VON, WIN, JMP, A, MV, JACK, LL, DAVE, totalling approximately 538.

OWNERS: Liard Copper Mines Ltd. and Hecla Operating Company.

OPERATOR: HECLA OPERATING COMPANY, 2009, 1177 West Hastings Street, Vancouver V6E 2K3.

METALS: Copper, molybdenum.

DESCRIPTION: A large deposit with copper-molybdenum mineralization has been developed in Upper Triassic pyroclastic rocks, quartz feldspar porphyry dykes, and breccias. Chalcopyrite, bornite, and molybdenite are the principal minerals of economic interest. Pyrite is widespread.

WORK DONE: The work consisted of 28.2 miles of linecutting, 200 lineal feet of bulldozer trenching, road repairs, and erection of two 25 by 100-foot Quonset-type core storage buildings. In addition, approximately 9 line-miles of IP and resistivity surveys and 28.2 line-miles of magnetometer survey were carried out, mostly in the Skeeter Lake and Mess Creek areas of the property. Hecla Operating Company's option agreement with Paramount Mining Ltd. lapsed on February 28.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, pp. 49-57; 1971, pp. 39, 40; 1972, pp. 527, 528; Assessment Reports 4507, 4832, 4842.

MARY, ME, GREG (104G-18, 42, 70) (Fig. G, No. 29) By B. M. Dudas

LOCATION: Lat. 57° 15.5′ Long. 130° 25′ (104G/8W)
LIARD M.D. Approximately 6 miles westerly from the junction of Ball Creek with Iskut River, between 3,000 and 5,500 feet elevation.

CLAIMS: ME 1 to 18, ROG 1 to 20, 22 to 27, 29, 31, 33 to 40, MENT 1 to 7, MOM 4 to 11, BR 1 to 3, BARE 1 to 15, VKR 1 to 6, TARA 1 to 27.

OWNER: GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD., 736 Eighth Avenue SW., Calgary, Alta.

METALS: Copper, molybdenum.

DESCRIPTION: Pyritic rocks associated with feldspar porphyry intrusions forming a zone about 1,200 feet in diameter in faulted Upper Triassic volcanic and sedimentary rocks contain minor chalcopyrite and molybdenite. Two intensely altered zones along the north and south margins of the feldspar porphyry intrusions are coincident with induced polarization and geochemical soil anomalies and were tested by diamond drilling.

WORK DONE:

The property was first examined in 1963 when Southwest Potash Corporation held the 'Mary group' of claims, totalling 43. Newmont Mining Corporation of Canada Limited in 1970 held the same ground under the Greg 1 to 38 claims. Both of these companies centred their exploration efforts on the 'cliff zone' which is on the north side of Ball Creek. Southwest Potash Corporation carried out geological mapping and geochemical sampling, and with a packsack drill completed six holes for a total of 199 feet. Newmont continued with geological mapping and geochemical and ground magnetometer surveys. The present company acquired the property in 1971, and since that time carried out mapping and geochemical sampling. During this past season surface geological mapping and time-domain IP survey were conducted which was followed by diamond drilling. Three NQ diamond-drill holes were drilled on the main showing.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 61; 1972, p. 530; Assessment Reports 3186, 3978, 3979, 4651.

SPECTRUM (104G-36) (Fig. G, No. 26) By B. M. Dudas

LOCATION: Lat. 57° 41′ Long. 130° 28′ (104G/9W)
LIARD M.D. About 20 miles west of Iskut village, on the east flank of Mount Edziza overlooking Nuttlude Lake, at approximately 4,500 feet elevation.

CLAIMS: SPECTRUM 1 to 18, 21 to 50, OWL 60 to 65, 67 to 96.

OWNER: Spartan Explorations Ltd.

OPERATOR: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

METALS: Copper, iron, minor molybdenum.

DESCRIPTION: Disseminated pyrite and chalcopyrite in intrusive rocks and pyrite, pyrrhotite, and chalcopyrite in hornfels are associated with a large, irregular, northerly trending dyke and subsidiary dykes of porphyritic granodiorite in volcanic, volcaniclastic, and sedimentary rocks of probable Upper Triassic age. Magnetite, chalcopyrite, some galena, and sphalerite were formed in calcareous siltstone and crystalline limestone to the south of the known intrusive masses.

WORK DONE: Four NQ diamond-drill holes were drilled on Spectrum 9, 11, and 13 claims, with a total footage of 1,478 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 57; 1971, p. 41; 1972, pp. 531-534.

IN, OUT, C (Fig. G, No. 30)

LOCATION: Lat. 57° 35' Long. 130° 55' (104G/10W)
LIARD M.D. About 25 miles south of Telegraph Creek, between Mess and Schaft Creeks, at approximately 3,000 feet elevation.

CLAIMS: IN, OUT, and C, totalling approximately 115.

OWNER: HECLA OPERATING COMPANY, 2009, 1177 West Hastings Street, Vancouver V6E 2K3.

METAL: Copper.

DESCRIPTION: An Upper Triassic assemblage has been intruded by a stock of basaltic augite porphyry and by quartz monzonite tongues and satellitic stocks of the Upper Cretaceous Yehiniko Lake batholith. The assemblage consists mainly of massive andesite, with subordinate intercalated tuffaceous andesite, chert, and limestone. The andesite is dioritized near the quartz monzonite. Minor chalcopyrite and specularite occur in quartz and quartz-calcite veins in quartz monzonite and andesite, and seams of chalcopyrite occur along minor shear zones in the basalt.

WORK DONE: Linecutting, 17.5 miles of new grid and 7 miles of recut grid; surface geological mapping, 1 inch equals 400 feet covering all claims; geochemical soil survey, 508 samples mostly taken on a 200 by 1,000-foot grid spacing covering the Out claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 534; Assessment Report 4638.

CALLBREATH (104G-7) (Fig. G, No. 42)

LOCATION: Lat. 57° 44' Long. 131° 15' (104G/11)
LIARD M.D. Nightout Mountain, 12.5 miles south and 3.5 miles west of Telegraph Creek.

(104G/13)

CLAIMS: B 1 to 10, BM 11 to 56.

OWNERS: W. Hamilton and Bart Mines Ltd.

OPERATOR: BART MINES LTD., 7th Floor, 900 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: The claims are underlain predominantly by hornblende granodiorite and quartz diorite. Greywacke occurs as an isolated outcrop near Nightout Creek, and a 100-foot-wide dyke of pyritic felsite has intruded granodiorite on Nightout Mountain. Chalcopyrite and bornite occur as disseminated grains and in quartz veinlets in fractured granodiorite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering B 1-10 and BM 15, 16, 26, 37, 38, 49, 53.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1900, 783; Assessment Report 4717.

LIM (Fig. G, No. 37)

LOCATION: Lat. 57° 49' Long. 131° 43' (104G/13)
LIARD M.D. Twenty-five miles west of Telegraph Creek, surrounding Latimer Lake.

CLAIMS: LIM 23 to 34, 45 to 58, 67 to 88.

OWNER: QUINTANA MINERALS CORPORATION, 1215 Two Bentall Centre, Vancouver.

DESCRIPTION: An area virtually without outcrop is surrounded by Triassic volcanic rocks intruded by syenite stocks and related mafic phases.

WORK DONE: Surface diamond drilling, three holes totalling 1,000 feet on Lim 23, 25, and 27; road construction, 3 miles.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 535.

JO (104G-76) (Fig. G, No. 43)

LOCATION: Lat. 57° 48.5' Long. 130° 12' (104G/16E)
LIARD M.D. About 10 miles northwest of Kinaskan Lake, 2 miles south of Tsazia Mountain, at approximately 6,000 feet elevation.

CLAIMS: JO 5, 7 to 10, 27, 28, 30, 32, 50, 225 to 231, 233, 234, 336, 337, 339, 341.

OWNER: SUMITOMO METAL MINING CANADA LTD., 1022, 510 West Hastings Street, Vancouver.

METAL: Copper.

DESCRIPTION: A northwesterly trending pyritic zone a few hundred feet wide contains minor chalcopyrite and traces of bornite. It separates porphyritic andesitic volcanic flows, flow breccias, and much younger feldspar porphyry sills on the east from crystal tuff, breccia, and tuffaceous epiclastic volcanic beds on the west. The bedded rocks on the west may overlie porphyritic volcanic rocks or be in fault contact with them. A representative sample collected from altered, pyritic, porphyritic volcanic rocks exposed in the centre of the pyritic zone returned values of .02 per cent copper with trace of gold and silver.

(104H/12W)

WORK DONE: Surface diamond drilling, five holes totalling approximately 1,800 feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 42; Assessment Report 3291.

SPATSIZI RIVER 104H

RED, SUS (104H-11) (Fig. G, No. 22)

By A. Panteleyev and B. M. Dudas

LOCATION: Lat. 57° 44' Long. 129° 46' (104H/12W)
LIARD M.D. Seven road miles south of the Stewart-Cassiar Highway, on a plateau south of Ealue Lake, at approximately 5,000 feet elevation.

CLAIMS: RED 4 to 34, SUS 79, 81, 83.

OWNER: Silver Standard Mines Ltd.

OPERATOR: ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.

METAL: Copper.

DESCRIPTION: A small, poorly drained upland area with little outcrop is underlain by pyritic feldspar porphyries intrusive into well-bedded sedimentary rocks. Highly altered, pyritic rocks are widespread and give rise to large, rusty weathering zones, much of which are transported gossans. The Red and SUS claims are continuous with the Chris group and have a similar geologic setting. For a more detailed description of the geological environment see description of the Chris in *Geology, Exploration, and Mining in British Columbia, 1972*, pages 535-537.

WORK DONE: A total of 3,012 feet in 14 percussion drill holes was completed on the Red 9, 10, and 25 claims. In addition, 4 line-miles of IP survey was done on the Red 9, 10, 25, and 26 claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 42.

LYNNE (Fig. G, No. 21)

LOCATION: Lat. 57° 54' Long. 128° 10' (104H/16E)
LIARD M.D. Approximately 15 miles north of Hyland Post.

CLAIMS: LYNNE 1 to 16.

OWNER: UNION MINIERE EXPLORATIONS AND MINING CORPORATION LIMITED, 200, 4299 Canada Way, Burnaby V5G 1H4.

DESCRIPTION: The area is underlain by gneissic diorite in contact with foliated amphibolites and metabasalt.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering all claims; magnetometer survey, 5.15 line-miles and geochemical soil survey, 148 samples taken at 200 by 400-foot grid spacing covering the west half of Lynne 1-16.

REFERENCE: Assessment Report 4746.

CRY LAKE 104I

SMRB (104I-60) (Fig. G, No. 17)

LOCATION: Lat. 58° 12' Long. 128° 24' (104I/1W)
LIARD M.D. Thirteen miles south-southeast of Rainbow Lakes, near the headwaters of an eastern tributary to Kutcho Creek, at approximately 4,200 feet elevation.

CLAIMS: SMRB 1 to 16.

OWNERS: Sumac Mines Ltd. and Sumitomo Metal Mining Canada Ltd.

OPERATOR: SUMAC MINES LTD., 1022, 510 West Hastings Street, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: The area is underlain by northerly dipping chlorite schists and quartz-sericite schists of Late Paleozoic age. A cruciform block of claims, now enclosed by claims of the Jeff group, was located on the site of a prospecting discovery of pyritic quartz-sericite schist containing some chalcopyrite and sphalerite. A sample from a small outcrop in the creek bed in the centre of the claim group assayed: copper, 0.22 per cent; zinc, 0.05 per cent; gold, trace; silver, trace, across the 14-foot exposure. A number of induced polarization anomalies concordant with the east-westerly trending rocks was outlined.

WORK DONE: Topographic mapping, 1 inch equals 400 feet, with 50-foot centres; surface geological mapping, 1 inch equals 5,000 feet covering all claims; IP survey, 9 line-miles; ground magnetometer survey, 5.1 line-miles; and geochemical soil survey, 5.6 line-miles covering SMRB 1-10, 13, 14; linecutting, 9.5 miles of grid.

REFERENCE: Assessment Report 4863.

JEFF (104I-61) (Fig. G, No. 44)

By A. Panteleyev

LOCATION: Lat. 58° 12.5' Long. 128° 24' (104I/1W)
LIARD M.D. About 13 miles south-southeast of Rainbow Lakes, near the headwaters of an eastern tributary to Kutcho Creek, at approximately 4,200 feet elevation.

CLAIMS: JEFF 1 to 7, 9, 13 to 22, 24 to 134.

OWNER: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

METALS: Copper, zinc.

DESCRIPTION:

Schistose rocks of Late Paleozoic age strike east-westerly and dip steeply northward. Sulphide minerals comprising mainly pyrite and traces of chalcopyrite and sphalerite are found in quartz-sericite schist and may be localized along a lithologic boundary of volcanic rocks, including acidic units, on the south with sedimentary rocks, including carbonate lenses, on the north.

Claims were located to cover a drainage geochemical anomaly and a pyritic zone on strike with pyritic rocks of the SMRB claims. The possibility of massive sulphide mineralization was indicated by the presence of a crudely banded, high-grade float boulder weighing about 300 pounds located by P. Ziebart. A representative sample of the float boulder assayed: copper, 13.7 per cent; zinc, 4.7 per cent; lead, 0.25 per cent; gold, 0.035 ounce per ton; and silver, 3.4 ounces per ton.

WORK DONE: Surface geological mapping, 1 inch equals 100 feet; airborne EM and magnetometer surveys.

NUP (104I-59) (Fig. G, No. 20)

LOCATION: Lat. 58° 18′ Long. 129° 35′ (104I/5E)
LIARD M.D. Twenty miles southeast of the town of Dease Lake, at the headwaters of Snowdrift Creek, between 4,600 and 5,500 feet elevation.

CLAIMS: NUP 1 to 169.

OWNER: KENNCO EXPLORATIONS, (WESTERN) LIMITED, 730 One Bentall Centre, Vancouver.

METALS: Molybdenum, copper.

DESCRIPTION: Triassic andesite on the southern third of the property has been intruded by granodiorite and quartz monzonite on the north as well as numerous small stocks and dykes of leucocratic feldspar porphyry. A large zone with disseminated pyrite also contains minor chalcopyrite and narrow quartz veinlets with pyrite and molybdenite.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering all claims; helicopter-borne magnetometer survey, 233 line-miles covering Nup 1-158; ground magnetometer survey, 6.7 line-miles covering Nup 33-40, 42, 61-68, 123-126; frequency-domain IP survey, 19.6 line-miles covering Nup 27-46, 55-74, 95, 96, 101-104, 109-126, 133-142; geochemical survey, 209 silt samples taken at approximately 400-foot intervals along the main streams and 15 rock samples taken from outcrop areas in the southwest part of the claim area; geochemical soil survey, 456 samples taken at 200 by 800-foot grid spacing covering Nup 37-42, 44, 46, 55-74, 96, 101-104, 111-126, 133-142, and 160-163 Fractions; surface diamond drilling, three holes totalling 1,000 feet on Nup 69 and 71; linecutting, 20 miles of grid.

REFERENCES: Assessment Reports 4644, 4645, 4659, 4660, 4661, and 4662.

EAGLE (104I-8) (Fig. G, No. 19)

LOCATION: Lat. 58° 30′ Long. 129° 10′ (104I/6E, 11E)
LIARD M.D. Thirty-two miles east of Dease Lake and 4 miles southeast of Eaglehead Lake, at approximately 5,000 feet elevation.

CLAIMS: EAGLE 1 to 79, 81, 83, 85, 87, 89 to 178.

OWNER: Spartan Explorations Ltd.

OPERATOR: IMPERIAL OIL LIMITED, 314, 1281 West Georgia Street, Vancouver V6E 3J7.

METALS: Copper, molybdenum.

(104I/7W)

DESCRIPTION: A sheared contact between quartz diorite of the Cassiar batholith and coarse clastic rocks of Lower Jurassic age is mineralized with disseminated pyrite, chalcopyrite, hematite, minor bornite, and molybdenite in linear, sheared zones within the altered quartz diorite. The mineralization has been traced over a considerable strike length by diamond drilling.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; IP survey, 33 line-miles; magnetometer survey, 30 line-miles; and geochemical soil survey, 500 samples, 20 line-miles covering all claims; surface diamond drilling, 19 holes totalling 11,114 feet on Eagle 2, 4, 18, 36, 38, 96-98, 112, 121.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 540-543; Assessment Report 4256.

TURN (104I-14) (Fig. G, No. 18)

LOCATION: Lat. 58° 28′ Long. 128° 50′ (104I/7W)
LIARD M.D. Near junction of Hard Creek with Turnagain River, between 3,500 and 5,000 feet elevation.

CLAIMS: TURN 1 to 13, 15, 17, 19, 21, 23, 27, 28, 33, 34, 49, 50, 53-55, 57-59, 61, 62, 65-68, PYRRHOTITE, COBALT.

OWNERS: Hard Creek Mines Limited (Pyrrhotite and Turn claims) and Falconbridge Nickel Mines Limited (Cobalt claim).

OPERATOR: WESFROB MINES LIMITED, 500, 1112 West Pender Street, Vancouver V6E 2S3.

METALS: Nickel, copper.

DESCRIPTION: Pentlandite, chalcopyrite, and pyrrhotite with traces of molybdenite and scheelite occur in a weakly serpentinized peridotite-dunite complex.

WORK DONE: Surface geological mapping, 1 inch equals 1,000 feet and 1 inch equals 400 feet covering the north group of claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 544.

DEASE LAKE 104J

PET (104J-25, 28) (Fig. G, No. 16)

By A. Panteleyev

LOCATION: Lat. 58° 23′ Long. 131° 47′ (104J/5W)
ATLIN M.D. Sixty-five miles west of Dease Lake, between Ketchum and Camp Island Lakes, at approximately 3,700 feet elevation.

CLAIMS: PET 15 to 42, 77, 78, PET 79, 92 to 94 Fractions.

OWNER: Texasgulf, Inc.

OPERATOR: ECSTALL MINING LIMITED, 701, 1281 West Georgia Street, Vancouver.

METAL: Copper.

(104J/8E)

DESCRIPTION: Occurrences of fracture-controlled chalcopyrite-hematite mineralization were tested by diamond drilling. Two angle holes were drilled, one to pass under the best showing and the other to penetrate under a prominent, elongate topographic depression flanking the mineralized zone. No sulphide minerals nor hematitic concentrations were noted in drill core. The rock is relatively homogeneous, fine-grained, weakly foliated quartz-bearing monzonite or granodiorite that has steeply dipping alternating zones of pervasive, pink hematitic staining and argillic alteration. Wide intercepts of strongly milled arkosic sand to cobble-sized fragments indicate that north-trending valleys and depressions in the claim area may be underlain by fault zones.

WORK DONE: Surface diamond drilling, two holes totalling 1,260 feet on Pet 19 and 37 and Pet 79 Fraction.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, pp. 549-551.

HU (104J-13) (Fig. G, No. 15)

LOCATION: Lat. 58° 21′ Long. 130° 13′ (104J/8E)
LIARD M.D. Nine miles southwest of the settlement of Dease Lake, on the south side of the Tanzilla River.

CLAIMS: HU 1 to 40, 43 to 52.

OWNER: Tournigan Mining Explorations Ltd.

OPERATOR: AMAX EXPLORATION, INC., 601, 535 Thurlow Street, Vancouver V6E 3L6.

METAL: Copper.

DESCRIPTION: Triassic tuff, lava, and tuffaceous sedimentary rocks have been intruded by a large, east-westerly trending syenite dyke, diorite, and feldspar porphyry intrusions. Pyrite, chalcopyrite, and malachite are localized in fracture zones and along contacts of intrusive bodies.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet covering 2 square miles; geochemical survey, 283 samples of which 206 were soil samples taken at 200 by 400-foot grid spacing; magnetometer survey, 28 line-miles; linecutting, 5.7 miles of grid extension; topographic mapping, approximately 5 square miles covering HU 1-16, 17, 19, 21, 23, 25, 27, 29, 31, 33-36, 38, 40, 43, 45, and 47-50.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 551; Assessment Report 4399.

TULSEQUAH 104K

TESS (Fig. G, No. 13)

LOCATION: Lat. 58° 03′ Long. 132° 50′ (104K/2W)
ATLIN M.D. East side Whiting Lake, at approximately 1,000 feet elevation.

CLAIMS: TESS 1 to 12, 21 to 32.

(104K/12W)

OWNER: NRD MINING LTD., 305, 535 Thurlow Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: Pyritic, argillic, and silicified volcanic and intrusive rocks of the Sloko Group form a large, rusty weathering zone that contains minor chalcopyrite and malachite on Vance Creek.

WORK DONE: General reconnaissance of claim area, in part helicopter supported; geochemical survey, 190 soil samples taken at 100-foot intervals on random lines on the westerly claims and 35 rock samples taken from irregularly spaced sites on the easterly claims.

REFERENCE: Assessment Report 4628.

POTLATCH-BANKER (104K-7) (Fig. G, No. 38)

LOCATION: Lat. 58° 40′ Long. 133° 32′ (104K/12E)
ATLIN M.D. On the Taku River, 2 miles above the junction with the Tulsequah River, at approximately 200 feet elevation.

CLAIMS: Seventy-five Crown-granted claims including the JANET, JOKER, and BANKER.

OWNER: New Taku Mines Limited.

OPERATOR: E. N. MacKINNON, 175 Shutick Way, Juneau, Alaska 99801.

METALS: Silver, gold, copper, lead, zinc.

DESCRIPTION: Polymetallic lenses, veins, and impregnations have formed replacement bodies in silicified, bedded, massive pre-Upper Triassic limestones.

WORK DONE: Surface geological mapping, 1 inch equals 20 feet on Joker; minor trenching and sampling.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 554.

ATLIN 104N

BOOT (104N-78) (Fig. G, No. 2)

LOCATION: Lat. 59° 32′ Long. 132° 48′ (104N/10W)
ATLIN M.D. Thirty miles east of Atlin, 2 miles east of Line Lake, between 3,000 and 5,000 feet elevation.

CLAIMS: LINE 43, 45, 90, 92, STORM 1 and 2, WIND 3 to 6, JENNIFER 1 to 8.

OWNER: CANADIAN JOHNS-MANVILLE COMPANY LIMITED, Box 1500, Asbestos, P.Q.

METALS: Copper, molybdenum, lead, zinc, silver, tungsten.

DESCRIPTION: On the property Jurassic quartz diorite has intruded cherts and argillites of the Cache Creek Group. Traces of chalcopyrite, azurite, malachite, argentiferous galena, and sphalerite are closely associated with two narrow cherty limestone lenses.

(104N/11W)

WORK DONE: Surface geological mapping, 1 inch equals 200 feet; magnetometer survey, 10 line-miles; geochemical soil survey, 435 samples taken at 200 by 600-foot grid spacing, 11.5 line-miles covering all claims.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 556 (NI, FIRE); Assessment Reports 4910, 4911, 4912.

ADERA (104N-52) (Fig. G, No. 12)

By B. M. Dudas

LOCATION: Lat. 59° 42' Long. 133° 24' (104N/11W)
ATLIN M.D. Approximately 20 miles northeast of Atlin, on the upper end of Ruby Creek, between 4,700 and 5,100 feet elevation.

CLAIMS: ADERA, KEY, MATT, CM, HOBO, CLAIRE, ZAP, RU, THOR, SNAFU, HL, BOY, PACIFIC, totalling approximately 189.

OWNER: Adanac Mining and Exploration Ltd.

OPERATOR: CLIMAX MOLYBDENUM CORPORATION OF BRITISH COLUMBIA, LIMITED, Mines Park, Golden, Colorado 80401; mine address, Box 59, Atlin.

METALS: Molybdenum, tungsten.

WORK DONE: Regional geological mapping of the Adera 1 to 12 claims and surrounding area was carried out. Two diamond-drill holes, totalling 500 feet, were drilled in the main mineralized zone.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 29-35; 1970, p. 28; 1971, p. 53; 1972, p. 557.

HOBO, AT, X (104N-54, 63) (Fig. G, No. 1)

LOCATION: Lat. 59° 41' Long. 133° 26' (104N/11W)
ATLIN M.D. Seventeen miles northeast of Atlin, 3 miles upstream from Surprise Lake on Boulder Creek.

CLAIMS: HOBO 91, 93 to 95, 105, 106, 108, 218, AT 7, 8, 10 to 18, X 1 to 8, 13 to 18.

OWNER: CANADIAN JOHNS-MANVILLE COMPANY LIMITED, Box 1500, Asbestos, P.Q.

METALS: Copper, molybdenum, silver, lead, tungsten.

WORK DONE: December 1972 – magnetometer survey, 23 line-miles.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 558; Assessment Reports 2852, 3571, 4253.

SUN (104N-62) (Fig. G, No. 7)

LOCATION: Lat. 59° 47' Long. 133° 35' (104N/13E)
ATLIN M.D. On the south slope of Mount McIntosh.

CLAIMS: SUN 1 to 6.

OWNER: CANADIAN JOHNS-MANVILLE COMPANY LIMITED, Box 1500, Asbestos, P.Q.

METAL: Molybdenum.

(104O/15E)

DESCRIPTION: Molybdenite has been noted in quartz veinlets and disseminated through a northeasterly trending altered mylonite zone in quartz monzonite.

WORK DONE: Linecutting and magnetometer survey, 11,200 line-feet.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 26; Assessment Report 4574.

JENNINGS RIVER 104O

SANDY (104O-12) (Fig. G, No. 9)

LOCATION: Lat. 59° 58′ Long. 130° 33′ (104O/15E)
LIARD M.D. Six miles from the Alaska Highway at Mile 706 on Freer Creek.

CLAIMS: SANDY 25 to 44.

OWNER: YUCOL MINES LTD., 8167 Main Street, Vancouver.

METALS: Lead, zinc, silver.

DESCRIPTION: Galena-bearing veins, lenses, and quartz veins with silver, lead, and zinc values are found in granodiorite and quartz monzonite of the Cassiar batholith.

WORK DONE: Geochemical soil survey, 86 samples taken at 100 by 400-foot grid spacing, approximately 2 line-miles and linecutting and VLF EM survey, approximately 2 line-miles covering Sandy 25-28; trenching, 10 by 3 by 2 feet on Sandy 25-28.

REFERENCES: Assessment Reports 3844, 4663.

AMY, LEO (104O-4) (Fig. G, No. 10)

LOCATION: Lat. 59° 55′ Long. 130° 29′ (104O/16W)
LIARD M.D. Two and one-half miles northwest of the north end of Tootsee Lake, between 4,200 and 4,500 feet elevation.

CLAIMS: LEO 1 and 2, FLO 1 to 4, FLO Fraction, L Fraction, F Fraction.

OWNER: FOSCO MINING LTD., Site 3, Comp. 17, R.R. 3, South Edmonton, Alta.

METALS: Silver, lead, zinc, copper.

DESCRIPTION: Galena, sphalerite, and tetrahedrite occur in limestone close to a granite contact.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Flo and Leo claims; underground geological mapping, 1 inch equals 20 feet covering Leo claims; geochemical survey, 89 samples (spot check and rechecks on past work); road construction, 22 miles (access to Leo 1 from Mile 701, Alaska Highway); underground work, 1,630 feet on Leo 1 and 2.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 580.

LUCK (104O-2) (Fig. G, No. 8)

LOCATION: Lat. 59° 59′ Long. 130° 27′ (104O/16W)
LIARD M.D. Seven miles from Alaska Highway at Mile 706 on Freer Creek, at approximately 5,000 feet elevation.

CLAIMS: LUCK 2 to 4, 7 to 22, 25 to 28, CONE 1 to 6.

OWNER: CONE MT. MINES LTD., 8167 Main Street, Vancouver.

METALS: Silver, lead, zinc.

DESCRIPTION: Quartz veins with silver, lead, zinc, and copper mineralization have been developed near a lamprophyre dyke in quartz monzonite of the Cassiar batholith.

WORK DONE: VLF EM survey, 2 line-miles covering Luck 21, 22, 26-28; geochemical soil survey, 302 samples, 2 line-miles covering Luck 17, 19, 21, 26-28; trenching and stripping on Luck claims.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 560.

McDAME 104P

VOLLAUG (HURRICANE, RED HILL) (104P-19) (Fig. G, No. 5)

By A. Panteleyev

LOCATION: Lat. 59° 12′ Long. 129° 38′ (104P/4E)
LIARD M.D. Two miles south of McDame Lake, Cassiar district, on Table Mountain, between 5,000 and 6,000 feet elevation.

CLAIMS: RED HILL 1 to 6, JENNIE EXTENSION 1 to 4, HURRICANE 1 to 4, ADIT 1 and 2, EAST Fraction, WEST Fraction Crown-granted claims.

OWNER: Table Mountain Mines Ltd.

OPERATOR: ASAMERA OIL CORPORATION LTD., 1500, 335 Eighth Avenue SW., Calgary, Alta.

METALS: Gold, silver.

DESCRIPTION:

A ribboned, graphitic quartz vein localized along the contact of sedimentary rocks in the hangingwall and volcanic rocks in the footwall is developed in rocks of the Sylvester Group. The vein has been traced over a distance of at least 5,000 feet and is up to 9.5 feet wide, averaging about 3 feet. It is conformable with enclosing strata along an east-westerly trend and has an average dip of 30 to 35 degrees to the north.

A 248-foot decline tested downward persistence of one of the surface ore shoots to a depth of 80 feet. The vein was not continuous but quartz was persistent along the same structure and good gold values were reported for the entire length of the decline including a 50-foot section having gold in excess of 2 ounces per ton.

A lower adit 300 feet vertically below the surface showing tested for mineralization at depth by a 500-foot crosscut and about 1,200 feet of drift along the vein. Most tunnelling was to the west of the crosscut as the vein pinched out to the east, but no ore shoots were found.

(104P/4E)

WORK DONE: Underground geological mapping of adit and drifts, 1 inch equals 20 feet; road construction, 3,000 feet on Jennie Extension, Adit 1, and Hurricane 1; stripping, one-half acre (portal site) on Hurricane 1; underground work, 248-foot decline on Hurricane 1 and 1,726 feet of adit and drifts on Hurricane 1 and 2.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1937, pp. B24-B34; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1970, p. 36.

WILDCAT (104P-57) (Fig. G, No. 39)

LOCATION: Lat. 59° 13′ Long. 129° 37′ (104P/4E)
LIARD M.D. Approximately 10 miles southeast of Cassiar, on Table Mountain.

CLAIMS: WILDCAT 1 to 16, TED Fraction.

OWNERS: W. D. Hartman and Frank G. Maynes.

OPERATOR: YELLOWSTONE MINES LTD., 203, 255 West Third Street, North Vancouver.

METALS: Copper, gold.

DESCRIPTION: An eastward extension of the Vollaug vein, containing minor disseminated pyrite, chalcopyrite, tetrahedrite, and free gold, follows the contact of pyroclastic rocks and argillite-slate, both of the Sylvester Group.

WORK DONE: Surface geological mapping, 1 inch equals 500 feet; seven samples taken from the vein and one from the dyke covering Wildcat 1, 2, 5, 7, 9, 11 and Ted Fraction.

REFERENCE: Assessment Report 4869.

JOEM (104P-38) (Fig. G, No. 6)

LOCATION: Lat. 59° 20′ Long. 129° 29′ (104P/6W)
LIARD M.D. Sixteen miles east of Cassiar and 5 miles north on access road, Mount Haskin area, between 3,800 and 5,000 feet elevation.

CLAIMS: JOEM, DAKO, TIBOR, PAC, DAVE, ANDY, SS, MOM, RAIN, MACK, BOB, TRI, totalling approximately 98.

OWNER: DELLA MINES LTD., Box 11107, 1055 West Georgia Street, Vancouver.

METALS: Silver, zinc, copper, bismuth.

DESCRIPTION: Mineralized skarn (or tactite) has been developed in Lower Cambrian limestone along bedding contacts with siliceous argillite. A lower adit collared in 1972 was extended to test down-dip continuity of mineralization found in the upper adit. The skarn zone maintained a 40-degree dip between the two levels and was entered by a crosscut approximately 1,450 feet from the portal. Mineralization consisting mainly of pyrrhotite is developed over a width exceeding 100 feet but grades are low and the high-grade zones intersected in holes drilled from the upper adit were not found.

(104P/6W)

WORK DONE: Underground geological mapping covering Joem 1 and 2; surface diamond drilling, two holes totalling 589 feet on Rain 2; underground workings on Joem 1 and 2 mapped, 1 inch equals 100 feet; tunnelling, 1,460 feet on Joem 1 and 2.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 561, 562.

NEW RICH (Fig. G, No. 4)

LOCATION: Lat. 59° 20′ Long. 129° 29′ (104P/6W)
LIARD M.D. Between Crown-granted claims Lots 301 and 330 on the south slope of Mount Haskin.

CLAIMS: NEW RICH 1 and 2.

OWNER: G.C.F. DALZIEL, Watson Lake, Yukon Tertitory.

METAL: Trace copper.

DESCRIPTION: Barren limestone overlies rusty quartzite containing trace sulphides.

WORK DONE: Linecutting, approximately 3.5 line-miles; surface geological mapping, 1 inch equals 200 feet; geochemical soil survey, 180 samples taken at 100 by 300-foot grid spacing for dithizone field test covering New Rich 1 and 2.

REFERENCE: Assessment Report 4481.

TATSHENSHINI RIVER 114P

LUNAR (114P-27) (Fig. G, No. 40)

LOCATION: Lat. 59° 42′ Long. 136° 38′ (114P/10E)
ATLIN M.D. One mile west of Mile 68.5 on the Haines road, between 3,400 and 4,500 feet elevation.

CLAIMS: LUNAR 1 to 5, 7, 10, 12, 14, MAG 1, 2, 5, 6.

OWNER: ERWIN KREFT, 13 Tutshi Road, Whitehorse, Yukon Territory.

METALS: Iron, lead, zinc, silver, gold, copper.

DESCRIPTION: The claims overlie a granite contact with a limestone and quartzite succession in which the upper part is mainly phyllitic schist. Mineralization includes magnetite and pyrrhotite as vein and replacement bodies and one galena-sphalerite showing.

WORK DONE: Two trenches, 100,000 cubic feet and 280,500 cubic feet on Lunar 1.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 28; 1972, p. 563.

PAM (114P-56) (Fig. G, No. 41)

LOCATION: Lat. 59° 42′ Long. 136° 37′ (114P/10E)
ATLIN M.D. Adjacent to Haines road at Mile 68, at approximately 3,500 feet elevation.

CLAIMS: PAM 5 to 16, 21 to 32.

OWNERS: G. F. Warnock and J. M. Wigley.

(114P/10E)

OPERATOR: NRD MINING LTD., 306, 535 Thurlow Street, Vancouver.

METALS: Copper, zinc.

DESCRIPTION: The claim area extends across the contact between Permo-Carboniferous metasedimentary rocks and a granitic batholith of Jurassic or younger age.

WORK DONE: Reconnaissance geological observations; geochemical survey, 544 soil samples taken at 200 by 750-foot grid spacing and 16 silt samples taken along Chuck and Stonehouse Creeks covering all claims.

REFERENCE: Assessment Report 4627.

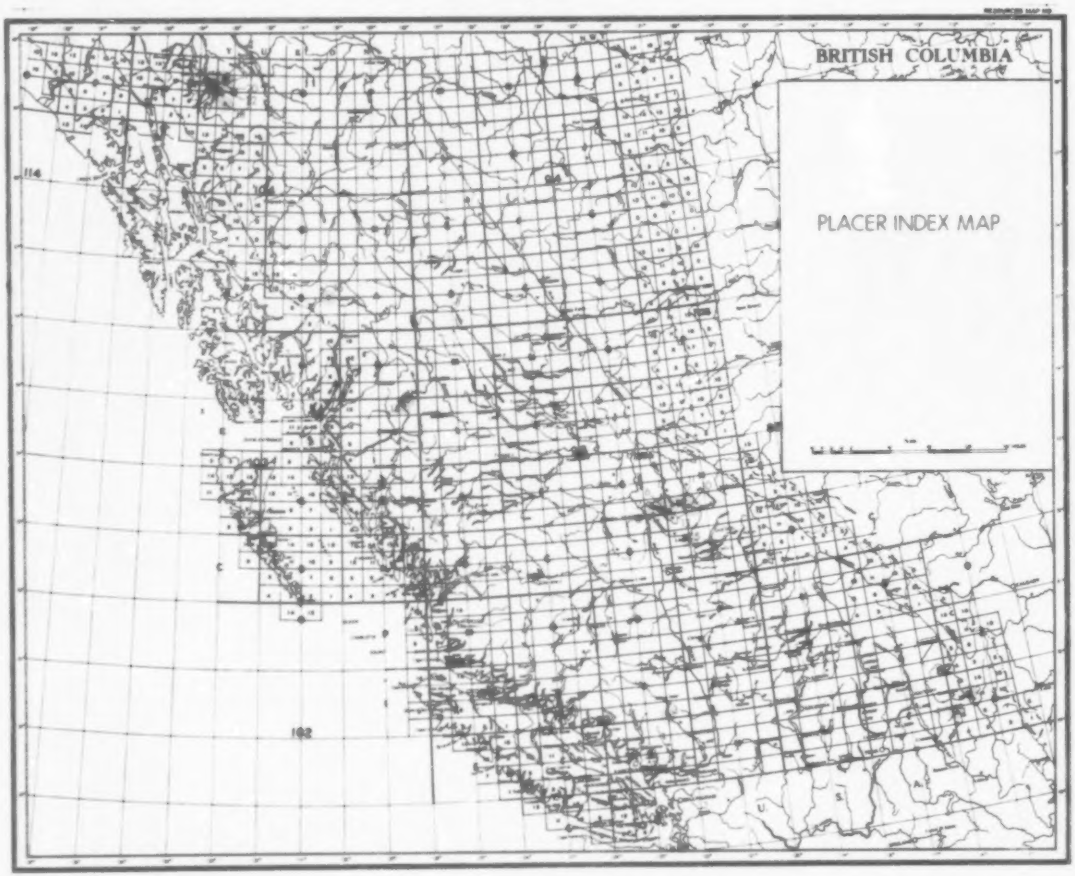

BRITISH COLUMBIA
PLACER INDEX MAP
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Figure H. Index map, placer-mining properties.

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PLACER

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GENERAL REVIEW OF PLACER MINING

The free market price of fine gold continued to rise during 1973. From $65.00 per ounce at the beginning of the year, the price rose to the year's high of $127.00 per ounce on June 5 and declined slowly to about $100.00 during the balance of the year. Interest in placer was heightened: the number of new leases issued in 1973 was 547 up from 284 issued in 1972, and the total number of leases in good standing was 1,841 in contrast to 1,452 in 1972. The recorded production of placer gold increased from 691 ounces valued at $26,905.00 in 1972 to 3,831 ounces valued at $311,524.00 in 1973.

REPORTS ON PLACER OPERATIONS

MOYIE RIVER

MOYIE RIVER PLACER **(Fig. H, No. 1)** **(82G/5W)**

Lat. 49° 25.5′ Long. 115° 56.5′ Fort Steele M.D.

A large number of placer leases including P.M.L. Nos. 862, 937, 1078, 1079, 1088, 1101, 1102, and 1166 on Moyie River at and near the mouth of Palmer Bar Creek, held by J. Pratt and associates of Lumberton were being explored by Canadian Occidental Petroleum Ltd. (801, 161 Egleton Avenue East, Toronto, Ont.).

Some trenching and churn drilling were done to confirm results of exploration work done previously by Cominco Ltd.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 566.

MAUS CREEK

MAUS MINERALS LTD. **(Fig. H, No. 2)** **(82G/12E)**

Lat. 49° 38′ Long. 115° 33′ Fort Steele M.D.

The company (409 Dieppe Blvd., Lethbridge, Alta.) holds P.M.L. Nos. 732, 733, 945, and 1126 on Maus Creek, 4 miles northeast of Fort Steele.

The bedrock drift on P.M.L. No. 733 was driven a further 21.5 feet on and in bedrock.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 566.

LILLOOET RIVER

HEMRICH MINES LTD. **(Fig. H, No. 3)** **(92J/2E)**

Lat. 50° 03′ Long. 122° 32′ New Westminster M.D.

The company (7507 Heather Street, Vancouver) holds the following placer leases, P.M.L. Nos. 780 to 787, 789, 831 to 836, 862 to 865, and 900 to 903, extending along the Lillooet River from 3 miles north of Billygoat Creek to 2 miles south of the creek.

A total of 21 pits and 535 lineal feet of trench was excavated and sampled. The samples were tested for gold and platinum group metals.

NEW ERA MINES LTD. **(Fig. H, No. 3)** **(92J/2E)**

Lat. 50° 01′ Long. 122° 31′ New Westminster M.D.

The company (821 Ballantrae Court, Port Moody) holds five placer leases, P.M.L. Nos. 775 to 799, extending along the Lillooet River 2.5 miles south of Billygoat Creek.

Sufficient work for assessment purposes was done.

BLACK CREEK

BLACK CREEK PLACER (Fig. H. No. 4) (93A/6E)

Lat. 52° 18′ Long. 121° 06′ Cariboo M.D.

P.M.L. Nos. 3098 and 3099 on Black Creek east of Horsefly and owned by Agnes and Harold Armes (381 North Second Avenue, Williams Lake) were under exploration by The Granby Mining Company Limited.

A seismic refraction survey was run over 5,600 feet of surveyed line.

REFERENCE: Assessment Report 4687.

CEDAR CREEK

GOLDEN HORN PLACER (Fig. H, No. 5) (93A/12E)

Lat. 52° 34′ Long. 121° 30′ Cariboo M.D.

Golden Horn Placer Ltd. (21 North Hills Centre, Kamloops) holds P.M.L. Nos. 1789, 2324, 2973, and 2974 on the south side of Cedar Creek, 5 miles southeast of Likely.

Some surface geological mapping, 150 lineal feet of trenching, and some stripping were done on the leases.

QUESNEL RIVER

MOONEY LEASE (Fig. H, No. 8) (93B/16W)

Lat. 53° 00′ Long. 122° 22′ Cariboo M.D.

P.M.L. No. 6391 on the north side of Quesnel River canyon is owned by F. P. Mooney (Box 4454, Quesnel). A few acres on a bench on the north side of Quesnel River which has been intermittently worked for placer gold were cleared of vegetation and logged. Loosely cemented gravel was bulldozed into piles to weather and loosen the gravel before washing in order to recover the gold content.

MARY CREEK

TOOP PLACER (Fig. H, No. 6) (93G/1E)

Lat. 53° 04′ Long. 122° 05′ Cariboo M.D.

T. Toop (R.R. 1, Quesnel) holds P.M.L. No. 7141 on Mary Creek at the junction of Norton Creek.

Prospecting on Mary Creek has located small areas of rich gold-bearing gravel in and adjacent to the creek bed. An area of 1.5 acres was logged and prepared for testing and working. A small shallow, rich pay zone was located and 200 cubic yards of gravel was mined by bulldozer and tracked front-end loader – backhoe. A simple washing plant was constructed, and tailings were discharged into settling ponds which prevented pollution of the stream.

COTTONWOOD RIVER

COTTONWOOD CANYON (Fig. H, No. 7) (93G/1W)

Lat. 53° 05' Long. 122° 16' Cariboo M.D.

P.M.L. Nos. 6721, 6774, 6833, 7064, and 7121 on the Cottonwood River at and downstream from the mouth of Umiti Creek are held by W. D. Jones (Box 1655, Quesnel) and associates. The main work was done on P.M.L. No. 7064 by W. D. Jones.

A D-8 bulldozer was used to clear about 6 acres preparatory to mining. About 2,000 cubic yards of gravel was dug and washed in testing operations.

ANTLER CREEK

CALIFORNIA GULCH PLACER (Fig. H, No. 9) (93H/3W)

Lat. 53° 00' Long. 121° 25' Cariboo M.D.

P.M.L. Nos. 6868, 6869, and 6870 on California Gulch, a tributary of Antler Creek, are held by T. M. Hannah (Wells).

This operation used water diverted from Wolf, Stevens, and California Creeks for hydraulicking gravel from an area cleared by bulldozer preparatory to mining. The channel was defined by test pitting and percussion drilling and about 29,000 cubic yards of gravel was sluiced in the period from May to August.

The operation was suspended because of lack of settling pond and water clarification facilities.

GROUSE CREEK PLACER (Fig. H, No. 10) (93H/3W)

Lat. 53° 02' Long. 121° 27.5' Cariboo M.D.

P.M.L. No. 6433 on Grouse Creek is held by L. Koopmans (3380 Cherry Street, Vancouver). Approximately 1 acre was cleared preparatory to mining and 2,000 cubic yards of gravel was sluiced by monitor supplied by water pumped from Grouse Creek.

CANADIAN CREEK PLACER (Fig. H, No. 10) (93H/3W)

Lat. 53° 04' Long. 121° 27.5' Cariboo M.D.

P.M.L. No. 7000 on the lower part of Canadian Creek, a tributary of Pleasant Valley Creek, is held by V. R. Vincent (Box 166, Wells).

Gravels forming the alluvial fan near the mouth of Canadian Creek were being tested by panning and sluicing. A front-end loader was used to dig test pits and to prepare grade for a water flume from Canadian Creek and for the sluice boxes.

WILLIAMS CREEK

CONKLIN GULCH PLACER (Fig. H, No. 10) (93H/3W)

Lat. 53° 03′ Long. 121° 29′ Cariboo M.D.

P.M.L. No. 7336 is held by Nicolas Bird (702, 1933 Robson Street, Vancouver). An access road was built preparatory to churn drilling in 1974.

SUMMIT CREEK

PINUS CREEK PLACER (Fig. H, No. 11) (93H/4E)

Lat. 53° 08′ Long. 121° 31.5′ Cariboo M.D.

P.M.L. Nos. 6886, 7071, and 7230 on Pinus Creek south of the junction of Shepherd Creek are held by B. C. Ludditt (Wells).

P.M.L. No. 6886 has been worked extensively and remnants of unworked auriferous gravel lie buried under old tailings piles. Extensions of previously mined sections of channels are being tested and prepared for mining.

About 1.5 acres were logged and prepared for mining. A washing plant was built and about 130 cubic yards of gravel was processed.

Equipment used: D-6 bulldozer, 300 Case backhoe – front-end loader, and 7-horsepower by 2.5-inch water pump.

REFERENCE: *Minister of Mines, B.C.,* Ann. Rept., 1949, p. 234.

EIGHT MILE LAKE PLACER (Fig. H, No. 11) (93H/4E)

Lat. 53° 09′ Long. 121° 32′ Cariboo M.D.

W. H. Myers (1028, 510 West Hastings Street, Vancouver) holds six placer leases in the vicinity of Eight Mile Lake, 4 miles northeast of Wells. The old Thistle hydraulic pit is covered by P.M.L. Nos. 7263 and 7264, and P.M.L. Nos. 6780, 6783, 6938, and 6939 cover adjoining ground surrounding Eight Mile Lake.

Exploration in the vicinity of the Thistle hydraulic pit is directed toward locating and testing the extensions of some of the pay channels previously worked. The old road to the head of the pit was cleared out and repaired. An area 200 by 300 feet at the head of the pit was cleared and two test pits excavated from which 100 cubic yards of gravel was tested.

Equipment comprised: D-6 bulldozer, TD-25 bulldozer, Michigan 175-A front-end loader, and screening and washing plant.

Exploration work on P.M.L. Nos. 6780 and 6783 is based on the premise that previous operators had not mined lake bed gravels from Eight Mile Lake. Test work consisted of the removal of the thick bed of organic muck overlying the lake bed gravel, excavating the gravel for washing it to recover placer gold and auriferous pyrite.

A 12-inch suction dredge powered by a 500-horsepower Cummins V-12 engine delivered about 7,365 cubic yards of muck through a floating pipeline to a stacking area in a small swamp. The dredge then excavated and washed about 600 cubic yards of lake bed gravel dug from several localities in the muck-free test area.

A 1.25-yard dragline was used to bail coarse boulders from the conical test pits dug by the suction dredge. The dredge subsequently was restationed over the cleaned pits which were then deepened.

Operations extended over a 3-month period. Equipment used was the self-powered 12-inch floating suction dredge and washing plant, floating pipeline, 1.25-yard dragline shovel, D-6 bulldozer, and front-end loader.

WILLOW RIVER

BEAVER PASS (LANGFORD) PLACER (Fig. H, No. 12) (93H/4W)

Lat. 53° 08.5′ Long. 121° 56′ Cariboo M.D.

David King (Box 904, Vernon) holds P.M.L. Nos. 7162 to 7166, 7184, and 7185 on Tregillus Creek at the junction of Aura Fina Creek. Exploration work was being done by Golden Ark Exploration Ltd. (Box 904, Vernon).

LIGHTNING CREEK

WINGDAM CREEK PLACER (Fig. H, No. 13) (93H/4W)

Lat. 53° 02.2′ Long. 121° 59.3′ Cariboo M.D.

Bud Henning (Box 4095, Quesnel) holds P.M.L. Nos. 6122, 6685, 6686, 6704, 6707, and 6708 under an option from Consolidated Vigor Mines Ltd. and with his associates also holds P.M.L. Nos. 7120, 7121, and 7146 to 7148.

The main area of interest is on P.M.L. No. 6708 on the south side of Lightning Creek immediately downstream from the junction of Wingdam Creek. There bench gravels and wash from Wingdam Creek are being tested. About an acre was prepared for mining, a number of test pits were dug to bedrock, and about 3,500 cubic yards of gravel was mined, transported to a washing plant, and processed. Water is pumped from a well adjacent to Lightning Creek and return water from the washing plant is clarified in a series of settling ponds before re-entering the creek.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 569.

SKEENA RIVER

LORNE CREEK PLACER (Fig. H, No. 14) (103I/16W)

Lat. 54° 53′ Long. 128° 23′ Omineca M.D.

P.M.L. No. 1922 at the junction of Lorne Creek and Skeena River is held by J. A. Wallington of Port Edward. About 250 cubic yards of sand and gravel was put through a 3-inch Bonanza-type suction dredge.

SABO PLACER **(Fig. H, No. 14)** **(103I/16W)**

Lat. 54° 53.8′ Long. 128° 22.9′ Omineca M.D.

P.M.L. No. 2051 on the east side of the Skeena River, slightly downstream from the junction of Lorne Creek, is held by Louie Sabo. He built living quarters and an access road in from Highway 16 and began hand mining on the river bank.

FLINT CREEK PLACER **(Fig. H, No. 15)** **(103I/16W)**

Lat. 54° 57′ Long. 118° 22′ Omineca M.D.

P.M.L. No. 2043 on Flint Creek about three-quarters of a mile upstream from the junction with Skeena River is held by C. D. McCully. McCully brushed out 1,000 feet of trail and put about 125 cubic yards of sand and gravel through a 3-inch Bonanza-type suction dredge.

SULPHURETS CREEK

SULPHURETS CREEK PLACER **(Fig. H, No. 16)** **(104B/8W, 9W)**

Lat. 56° 30′ Long. 130° 21′ Skeena M.D.

P.M.L. Nos. 103 to 105, 110, and 111 on Sulphurets Creek at the junction of Mitchell Creek are held by C. L. Kilbury (Ketchikan, Alaska) and associates. During a 2-month period, a large sluice box and an addition to the cabin were built.

ATLIN AREA

The renewal of interest in placer in the Atlin Mining Division resulted in a total of 113 placer mining leases and 105 certificates of work being issued in 1973 in comparison with 65 leases and 46 certificates in 1972.

Assessment work was recorded on placer leases on Birch Creek, Boulder Creek, Bull Creek, Fourth of July Creek, Lina Creek, Otter Creek, Spruce Creek, Squaw Creek, Taku Arm of Tagish Lake, and Wright Creek.

In addition, details of work done on other leases are recorded as follows:

McKEE CREEK **(Fig. H, No. 17)** **(104N/5E)**

Lat. 59° 28′ Long. 133° 33′ Atlin M.D.

(1) P.M.L. Nos. 1790, 1791, and 1796 on upper McKee Creek are held by John Harvey. Three men were employed for three months setting up a monitor and sluice boxes and building settling ponds. About 2,500 cubic yards of gravel was sluiced.

(2) P.M.L. Nos. 1655, 1689, and 1690 on lower McKee Creek are held by Antonio Vesnaver. Vesnaver worked alone for two months drift mining under the north bank of the creek; about 1,000 cubic yards of clayey gravel was sluiced.

O'DONNEL RIVER (Fig. H, No. 18) (104N/6W)

Lat. 59° 22' Long. 133° 17' Atlin M.D.

P.M.L. Nos. 1691 to 1696 and 1725 on the west side of O'Donnel River are held by R. Crum, Cyril James, and associates of Atlin. Two men worked for two months building an access road, sluice boxes, and a 12-inch water line. Two settling ponds were built below the sluice boxes.

WRIGHT CREEK (Fig. H, No. 19) (104N/11W)

Lat. 59° 37' Long. 133° 21' Atlin M.D.

P.M.L. Nos. 1684 to 1686, 1698, 1700, 1701, and 1742 extending up Wright Creek from the mouth are held by R. Day (Fort Lauderdale, Florida). A geological examination and report on the claims were made by W. M. Sharp for Surprise Resources Ltd.

REFERENCE: Assessment Report 4551.

OTTER CREEK (Fig. H, No. 20) (104N/11W)

Lat. 59° 36.5' Long. 133° 23.5' Atlin M.D.

P.M.L. Nos. 1687, 1688, 1699, and 1702 to 1706 on Otter Creek are held by R. Day (Fort Lauderdale, Florida). A geological examination and report were made for Surprise Resources Ltd. by W. M. Sharp.

REFERENCE: Assessment Report 4551.

RUBY CREEK (Fig. H, No. 21) (104N/11W)

Lat. 59° 40.5' Long. 133° 20' Atlin M.D.

P.M.L. No. 1321 on Ruby Creek held by S. R. Craft of Atlin was worked under lease by J. E. Wallis who installed a monitor and cleaned out the old hydraulic pit. The gold-bearing gravel is partly overlain by Pleistocene olivine basalt.

SPRUCE CREEK (Fig. H, No. 22) (104N/11W)

Lat. 59° 33' Long. 133° 29' Atlin M.D.

(1) P.M.L. Nos. 1746 to 1754, 1757 to 1760, and 1787 on Spruce Creek upstream from Dominion Creek are held by Gethyn Mining Co. Ltd. (890 West Pender Street, Vancouver). A magnetometer survey comprising 24 line-miles of grid and survey was performed.

REFERENCE: Assessment Report 4843.

(Fig. H, No. 23) (104N/12E)

Lat. 59° 33.5' Long. 133° 32' Atlin M.D.

(2) P.M.L. 1567 is held by A. Mattson of Atlin. The Colpe drift mine was on this lease and 500 cubic yards of the old tailings was sluiced. The former water intake was restored and a settling pond was built below the old tailings flume.

REFERENCE: Assessment Report 4551.

(Fig. H, No. 24) **(104N/12E)**

Lat. 59° 34.5′ Long. 133° 34′ Atlin M.D.

(3) P.M.L. Nos. 1609 and 1677 on the lower part of Spruce Creek are held by T. S. Osborne of Atlin. With his partner, Osborne worked about six months on the two leases. On the lower part of P.M.L. 1677, a settling pond was built and 15,000 cubic yards of old tailings was sluiced. On P.M.L. 1609, 5,000 cubic yards of old tailings was excavated. Water for sluicing was provided by a 6-inch diesel pump. Equipment in use was a TD-20 bulldozer and a 450 Case backhoe.

PINE CREEK **(Fig. H, No. 25)** **(104N/12E)**

Lat. 59° 35.8′ Long. 133° 32.5′ Atlin M.D.

(1) P.M.L. Nos. 705, 1476, 1620, and 1777 on Pine Creek near Discovery are held by Karl Sieger of Atlin. Part of the Surprise Lake road was relocated and two men working for four months with a D-8 bulldozer and a 922 Caterpillar loader excavated and sluiced 30,000 cubic yards of gravel. The tailings were discharged into settling ponds.

(2) P.M.L. Nos. 1354, 1355, 1356, 1475, and 1710, adjoining Sieger's leases in the east, are held by E. D. Thachuk. A 2.5-yard Northwest dragline and a D-8 Caterpillar were used to strip 80,000 cubic yards of old hydraulic tailings. About 10,000 cubic yards of pay streak was excavated and washed in an all-steel sluice box. The tailings were discharged into settling ponds. Most of the work was done on ground that previously had been hydraulicked.

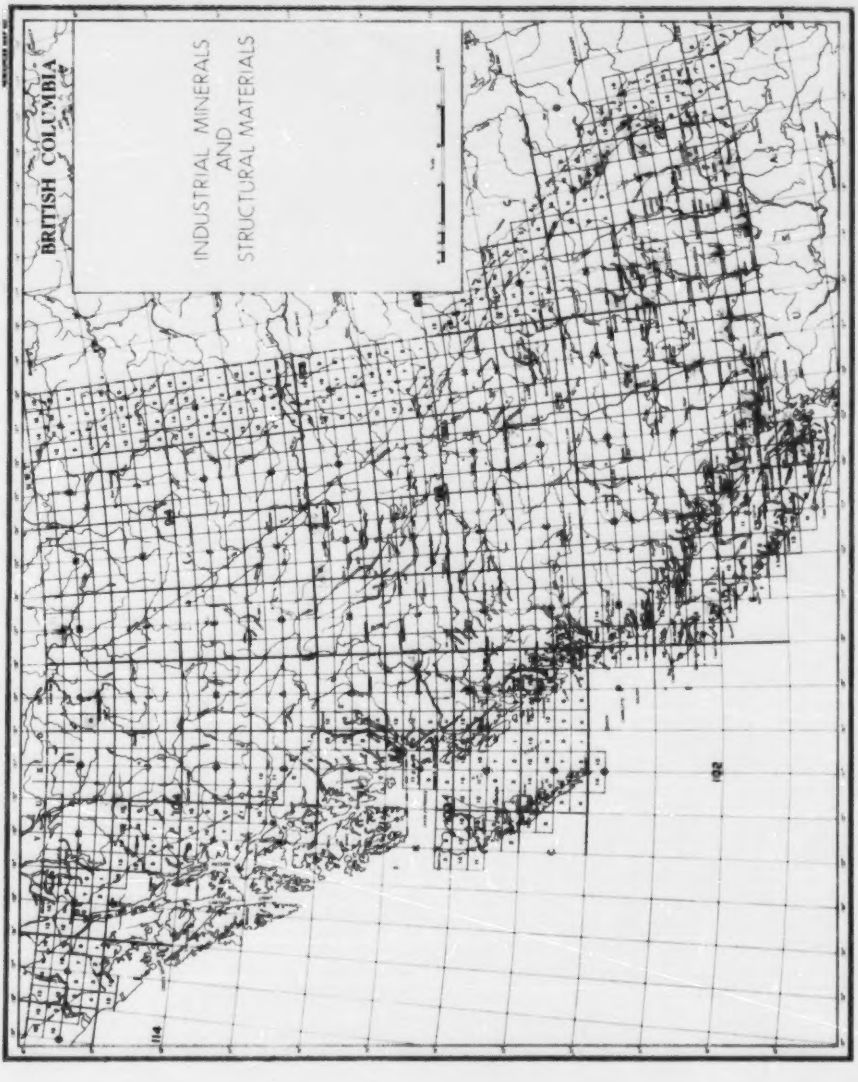
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Figure J. Index map, structural material and industrial mineral properties.

KEY TO STRUCTURAL MATERIAL AND INDUSTRIAL MINERAL PROPERTIES ON INDEX MAP, FIGURE J.

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GENERAL REVIEW OF STRUCTURAL MATERIALS AND INDUSTRIAL MINERALS

By J. W. McCammon

Activity in the structural materials and industrial minerals sector of the mining industry was about normal in British Columbia in 1973.

New work reported was restricted to exploration of barite deposits along the Alaska Highway and an asbestos showing in the Menatatuline Range, some diamond drilling on limestone deposits on Texada Island and near Kelly Lake, some trenching on pyrophyllite near Princeton, and geological examination of silica near Greenwood and talc near Keefers.

REPORTS ON COMMODITIES

ASBESTOS

D, R (92H/NE-128) (Fig. J, No. 1)

LOCATION: Lat. 49° 32′ Long. 120° 54′ (92H/10W)
Report on this property under metals in section 92H/10W.

ACE (Fig. J, No. 2)

LOCATION: Lat. 58° 53.5′ Long. 132° 06′ (104K/16E)
ATLIN M.D. Seventy-seven miles southeast of Atlin, on Tseta Creek, between 4,500 and 5,500 feet elevation.
CLAIMS: ACE 1 to 14.
OWNER: CANADIAN JOHNS-MANVILLE COMPANY LIMITED, Box 1500, Asbestos, P.Q.
DESCRIPTION: Narrow veinlets of moderately harsh to silky chrysotile fibres occur in sheared Permian serpentinized ultramafic rocks.
WORK DONE: Magnetometer survey, 8 line-miles covering Ace 1-14.
REFERENCES: *Minister of Mines, B.C.*, Ann. Rept., 1966, p. 260; Assessment Report 1030.

CASSIAR MINE (Fig. J, No. 3)

By D.I.R. Henderson

LOCATION: Lat. 59° 19.6′ Long. 129° 49.4′ (104P/5W)
LIARD M.D. Three miles north of Cassiar, on Mount McDame between 5,870 and 7,000 feet elevation.
CLAIMS: Forty-two Crown-granted and five leased.
OWNER: CASSIAR ASBESTOS CORPORATION LIMITED, 1001, 85 Richmond Street West, Toronto, Ont.; mine office, Cassiar.

DESCRIPTION:

The Cassiar orebody, consisting of chrysotile asbestos veinlets in a mass of serpentine, is mined from a 2,000-foot long and 1,200-foot wide open pit. The hangingwall is retreated in 150 to 250-foot wide slices to expose the ore in the bottom of the pit. Asbestos ore is hauled by truck to the nearby primary concentrator (elevation 5,800 feet) and then transferred to the mill by truck (7 miles) or by aerial tramway (3 miles). The mill is located adjacent to the company township of Cassiar which is in Troutline Creek valley at an elevation of 3,500 feet.

A 25 per cent concentration is achieved at the primary concentrator by crushing and screening out the coarser fractions. Selective crushing and screening is carried out at the mill where the various grades of fibre are lifted from the screens by air.

WORK DONE:

Ore production during 1973 was slightly in excess of 1.1 million tons. Approximately 3.7 million tons of waste rock was removed.

Among the plant and town additions during 1973 were included: four 50-ton trucks, lighting for mine waste dumps, a new mine service garage, No. 13 diesel generator, and a delivery table for the hospital. The new retail food store was also completed.

The company employed approximately 510 persons, including those in the accommodation, catering, and retail services provided by the company.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 573.

BARITE

TOBY CREEK BARITE (Fig. J, No. 4) By R. W. Lewis

LOCATION: Lat. 50° 21' Long. 116° 24.4' (82K/8W)
GOLDEN M.D. Near the southwest corner of Lot 16154 on Toby Creek at the mouth of Jumbo Creek, 20 miles southwest of Invermere.

CLAIMS: JUMBO.

OWNER: MOUNTAIN MINERALS LIMITED, Box 700, 529 Sixth Street South, Lethbridge, Alta.; mine address, Box 603, Invermere; William MacPherson, property superintendent.

WORK DONE:

In the summer of 1970, Mountain Minerals Limited completed the construction of a plant to recover barite from the tailings pond of the old Mineral King mine. Since then the plant has operated each summer and fall, being closed during the winter months and early spring. The recovered barite concentrate is hauled by truck to the railway at Athalmer for shipment to the company processing plant at Lethbridge, Alta.

During 1973, approximately 7,000 tons of barite sand was shipped to Lethbridge and approximately 9,000 tons was milled and stockpiled at the siding in Athalmer.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 578.

BRISCO BARITE (Fig. J, No. 5)

By R. W. Lewis

LOCATION: Lat. 50° 49.8' Long. 116° 19.5' (82K/16W)
GOLDEN M.D. Between Templeton River and Dunbar Creek, 2.5 miles west of Brisco.

CLAIMS: WAMINECA (Lot 15044), CANYON (Lot 15045), SALMON (Lot 15046), CARMINE (Lot 15047), and NORTHISLE (Lot 15048).

OWNER: MOUNTAIN MINERALS LIMITED, Box 700, 529 Sixth Street South, Lethbridge, Alta.; mine address, Box 603, Invermere; William MacPherson, property superintendent.

WORK DONE:

During the year the company engaged a mining contractor to develop the orebody below the existing lowest level.

A 450-foot long 7-foot by 9-foot decline was driven at 8 degrees through unstable ground that required timbering for the full length. From the decline 275 feet of 7-foot by 9-foot flat drift was driven along strike. Later, an additional 120 feet of 5-foot by 7-foot flat drift had to be driven due to the unexpected extension of the orebody. Then 195 feet of 5-foot by 7-foot raises and 675 feet of 5-foot by 7-foot subdrifting were completed in preparation for stope development.

During the year 9,000 tons of barite was shipped to Lethbridge for further processing and an additional 2,500 tons was stockpiled at Brisco.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 578.

BAROID OF CANADA (Fig. J, No. 6)

By R. W. Lewis

LOCATION: Lat. 50° 56' Long. 116° 29' (82K/16W)
GOLDEN M.D. At 3,100 feet elevation, on the west side of Jubilee Mountain, 5.5 miles northwest of Spillimacheen.

CLAIMS: Former Silver Giant mine property.

OWNER: BAROID OF CANADA, LTD., Box 250, Onoway, Alta; S. Wise, superintendent.

WORK DONE:

The company owns and operates a plant to recover barite concentrates from the tailings of the former Giant Mascot mine. The operation of the plant is seasonal and the plant is shut from early winter to late spring.

A total of 79,082 tons of mine tailings was treated to produce 21,966 tons of crude barite concentrate. Concentrate was trucked from the plant site to the railway loading point at Spillimacheen, and then shipped to the company's processing plant in Onoway, Alta.

During mid-summer 1973 the company contracted to mine, mill, and stockpile a small orebody contained within the confines of the former Giant Mascot mine open-pit area. A total of approximately 120,000 tons of barite ore was recovered from the open pit, along with the removal of approximately 110,000 cubic yards of waste rock, for an overall waste to ore ratio of about 0.92 to 1.0. The prime contractor for this work was Vanfour Contracting Ltd. of Vancouver. The work of crushing the ore to minus 2-inch size was in progress at the end of the year.

Coincidentally with this open-pit mining the company expanded its ore-processing facilities with the construction of a new mineral jig. A 42-inch, three-cell, end-flow Bendelari jig was installed in the new building. Crushers, conveyor belts, drags, and other ancillary equipment were added to complete the new processing phase of the operation. This new equipment will come into operation early in 1974.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 579.

HOMESTAKE (Fig. J, No. 7)

LOCATION: Lat. 51° 06.7' Long. 119° 49.5' (82M/4W)
Report on this property under metals in section 82M/4W.

PARSON BARITE (Fig. J, No. 8)

By R. W. Lewis

LOCATION: Lat. 51° 01.5' Long. 116° 39' (82N/2E)
GOLDEN M.D. At 3,700 feet elevation, 3.5 miles due south of Parson.

CLAIMS: HILLTOP (Lot 14351), SNOWDROP (Lot 14352), and HONEST JOHN (Lot 15734).

OWNER: MOUNTAIN MINERALS LIMITED, Box 700, 529 Sixth Street South, Lethbridge, Alta.; mine address, Box 603, Invermere; William MacPherson, property superintendent.

WORK DONE: In the early spring 1,528 tons of barite was shipped to Lethbridge from a stockpile at the mine. During the summer an additional 2,376 tons was mined by contract and stockpiled at the minesite.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 579.

SHEILA (Fig. J, No. 9)

LOCATION: Lat. 55° 54' Long. 124° 42' (93N/15E)
Report on this property under metals in section 93N/15E.

DENIS (Fig. J, No. 10)

LOCATION: Lat. 59° 42' Long. 127° 12' (94M/11E)
LIARD M.D. One kilometre north of the Alaska Highway at Mile 546, between 2,000 and 3,500 feet elevation.

CLAIMS: DENIS 1 to 22.

OPERATOR: TOURNIGAN MINING EXPLORATIONS LTD., 704, 535 Thurlow Street, Vancouver V6E 3L2.

DESCRIPTION: Thin-bedded Cambrian siltstones are cut by several parallel veins of massive barite; some veins contain scattered blebs of galena and chalcopyrite.

WORK DONE: Surface geological mapping, 1 inch equals 200 feet covering Denis 1-22; gravity survey covering Denis 13-16, 21, 22; geochemical soil survey, 450 samples, 6 line-miles covering Denis 1-22; surface diamond drilling, five holes totalling 500 feet on Denis 13-16 and 21; road construction, 2 miles on Denis 13-16 and 21; trenching, 200 feet on Denis 21 and 22.

REFERENCE: Assessment Report 4482.

BEAR, MOOSE, BEAVER (Fig. J, No. 11)

LOCATION: Lat. 59° 46' Long. 127° 13' (94N/14)
LIARD M.D. Approximately 5.5 to 7.5 kilometres north of Milepost 547 on the Alaska Highway, at 2,400 feet elevation.

CLAIMS: BEAR, MOOSE, BEAVER, DEER, WOLF, totalling approximately 94.

OWNER: DRESSER INDUSTRIES, INC., 525, 404 Sixth Avenue SW., Calgary, Alta.

WORK DONE: Gravity survey, 1 line-mile covering Moose 13 and 14; surface diamond drilling, 23 holes totalling 3,135 feet on Moose 13 and 14; trenching, 500 feet on Moose 13.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 579, 580.

ATAN (Fig. J, No. 12)

LOCATION: Lat. 59° 12' Long. 129° 12' (104P/3E)
LIARD M.D. At approximately 2,300 feet elevation 1.5 miles east of McDame Post surrounding Atan Lake on the north side of Dease River.

CLAIMS: ATAN 1 to 6, FOX 1, ADAIR 1 to 8, SKI 1 to 18, WOLF 1, 3, 5, 7, A, B, and C Fractions, AUGUST 1 to 6.

OWNER: TOURNIGAN MINING EXPLORATIONS LTD., 704, 535 Thurlow Street, Vancouver V6E 3L2.

DESCRIPTION: A limestone-dolomite member of the Atan Group strikes northwest under the claims, and in part is oolitic, reefoid, and brecciated. Trenching has exposed lenses and patches of barite, knots of galena, and traces of tetrahedrite, chalcocite, and chalcopyrite, in limestone.

WORK DONE: Gravity survey, 22 line-miles covering all claims; surface diamond drilling, approximately eight holes totalling 2,000 feet; claims and topography mapped.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 561; Assessment Report 4581.

BUILDING STONE

SEBAC QUARRY (Fig. J, No. 13)

By P. E. Olson

LOCATION: Lat. 49° 01.9′ Long. 118° 22.8′ (82E/1W)
The operation is immediately north of Highway 3, about 3 miles east of Grand Forks.

OWNER: SEBAC ENTERPRISES LTD., Box 56, Cascade.

WORK DONE: Various small quarries and a crushing plant have been operated periodically for several years by different operators. Considerable brownish quartzite was shipped to Vancouver as building stone. Some dolomite was crushed and shipped to various markets.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 580.

PORCUPINE (Fig. J, No. 14)

LOCATION: Lat. 49° 15.5′ Long. 117° 03.7′ (82F/6E)
Approximately 11 miles east-northeast of Salmo, astride Porcupine Creek, 6.75 miles east of its junction with the Salmo River.

OWNERS: JAMES and IRIS BAKKEN, Box 486, Salmo.

DESCRIPTION: Thin-bedded quartzite is quarried for building stone.

WORK DONE: Trenching and stripping on Porcupine 1 and 2.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 491; 1972, p. 580 (PORCUPINE CREEK).

CRAWFORD CREEK DOLOMITE QUARRY (Fig. J, No. 15)

By P. E. Olson

LOCATION: Lat. 49° 41.5′ Long. 116° 48′ (82F/10W)
Just south of Crawford Creek, about 1.5 miles from Crawford Bay.

OPERATOR: INTERNATIONAL MARBLE & STONE COMPANY LTD., 4030 Seventh Street SW., Calgary, Alta.

WORK DONE: A deposit of dolomite lies along the east side of the road leading from Crawford Bay to upper Crawford Creek. The stone is medium grained and nearly pure white, thus making it valuable for the production of roofing chips and stucco dash. About 38,940 tons of dolomite was mined underground. The quarry phase of mining was stopped in favour of underground mining whereby cleaner rock is obtained.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 586.

PITT RIVER QUARRY (Fig. J, No. 16)

By J. W. Robinson

LOCATION: Lat. 49° 17.4′ Long. 122° 39.3′ (92G/7E)
On the east bank of Pitt River on the northern side of Sheridan Hill, 4 miles north of Pitt Meadows.

OWNER: PITT RIVER QUARRIES LTD., 16211 – 84th Avenue, Surrey.

WORK DONE: Eight men, employed by Pitt River Quarries Ltd., mined and crushed diorite for crushed rock, rip-rap, and armour rock. At year end, the operation was sold to Dillingham Corporation of Canada Ltd.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 581.

GILLEY QUARRY (Fig. J, No. 17)

By J. W. Robinson

LOCATION: Lat. 49° 19.2′ Long. 122° 40.5′ (92G/7E)
On the west bank of Pitt River, immediately south of the mouth of Munro Creek.

OWNER: CONSTRUCTION AGGREGATES LTD., 850 Southwest Marine Drive, Vancouver; quarry address, Box 98, Port Coquitlam.

WORK DONE: Twenty-nine men produced quartz diorite for crushed rock, rip-rap, and armour rock.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 581.

MC (Fig. J, No. 18)

LOCATION: Lat. 49° 35.5′ Long. 123° 52.5′ (92G/12W)
Report on this property under metals in section 92G/12W.

VALLEY GRANITE PRODUCTS (Fig. J, No. 19)

By J. W. Robinson

LOCATION: Lat. 49° 15.5′ Long. 121° 40.5′ (92H/5E)
West side of Highway 1, 10 miles west of Hope.

OWNER: VALLEY GRANITE PRODUCTS LIMITED, 10070 Timberline Place, Chilliwack; K. Jessiman, president.

WORK DONE: The plant formerly produced granite products, including poultry grits, stucco dash, and sand blast materials. There was no production during the year. The crushing and screening plant was dismantled and the machinery was removed, access roads to the open pit were fenced, topsoil was spread on the benches, and some trees were planted.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 581, 582.

CEMENT

BRITISH COLUMBIA CEMENT LIMITED (Fig. J, No. 20)

LOCATION: Lat. 48° 35.1′ Long. 123° 31.2′ (92B/12E)
At Bamberton.

OWNER: BRITISH COLUMBIA CEMENT LIMITED, north foot of Columbia Street, Vancouver.

WORK DONE: Cement produced, 559,350 tons.

CANADA CEMENT LAFARGE LTD. (Fig. J, No. 21)

LOCATION: Lat. 49° 09.6′ Long. 123° 00′ (92G/3E)
On the Fraser River, south shore of Lulu Island, at the foot of No. 9 road.

OWNER: CANADA CEMENT LAFARGE LTD., head office, 1051 Main Street, Vancouver.

WORK DONE: Cement produced, 233,179 tons.

CANADA CEMENT LAFARGE LTD. (Fig. J, No. 22)

LOCATION: Lat. 50° 39.7′ Long. 120° 03.3′ (92I/9E)
On the north bank of the South Thompson River, 11 miles east of Kamloops.

OWNER: CANADA CEMENT LAFARGE LTD., head office, 1051 Main Street, Vancouver.

WORK DONE: Cement produced, 163,721 tons.

CLAY AND SHALE

THUNDER HILL (Fig. J, No. 23)

By R. W. Lewis

LOCATION: Lat. 50° 09′ Long. 115° 49.9′ (82J/4W)
At the bottom of Thunder Hill, 2 miles west of Canal Flats.

OWNER: MOUNTAIN MINERALS LIMITED, Box 700, 529 Sixth Street South, Lethbridge, Alta.; mine address, Box 603, Invermere; William MacPherson, property superintendent.

WORK DONE: During the year, 1,517 tons of shale was shipped to Lethbridge for further processing. An upper safety bench was excavated and 5,000 tons or rock was mined and stockpiled.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 583.

HILLBANK SHALE QUARRY (Fig. J, No. 24)

By W. C. Robinson

LOCATION: Lat. 48° 43.1′ Long. 123° 39.4′ (92B/12E)
On the east bank of Koksilah River, 1 mile southeast of Cowichan Station.

OWNER: BRITISH COLUMBIA CEMENT COMPANY LIMITED, R.R. 1, Mill Bay.

WORK DONE: Shale produced for use in Bamberton cement plant, 32,364 tons.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 583.

BRITISH COLUMBIA LIGHTWEIGHT AGGREGATES LTD. (Fig. J, No. 25)

By W. C. Robinson

LOCATION: Lat. 48° 48.1′ Long. 123° 11′ (92B/14E)
The quarries and plant are on the peninsula between Winter Cove and Lyall Harbour, at the north end of Saturna Island.
OWNER: BRITISH COLUMBIA LIGHTWEIGHT AGGREGATES LTD., 855 West Broadway, Vancouver.
WORK DONE: Twenty men mined 48,950 tons of shale and produced and shipped approximately 28,750 tons of expanded shale aggregate. Some shale was mined from a new quarry near the plant area.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 583.

DUNSMUIR SHALE PIT (Fig. J, No. 26)

By W. C. Robinson

LOCATION: Lat. 49° 11.8′ Long. 124° 05.5′ (92F/1E)
At 900 feet elevation, in the northeast part of Block 226, Dunsmuir Land District, adjoining Weigles (Black Jack, Dumont) road on the north, 2 miles south and west of the powerline crossing at Brannen Lake.
OWNER: Canada Cement Lafarge Ltd., 1051 Main Street, Vancouver.
OPERATOR: BUTLER-LAFARGE LTD., Box 435, Nanaimo.
WORK DONE: Shale produced for use in cement manufacture, 60,336 tons. A crew averaging two men was employed.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 584.

RICHMIX QUARRY (Fig. J, No. 27)

By J. W. Robinson

LOCATION: Lat. 49° 03.5′ Long. 122° 11.7′ (92G/1E)
Adjoins Kilgard on the northeast.
OWNER: MUTUAL MATERIALS LIMITED, 2890 East Kent Avenue, Vancouver.
WORK DONE: Fireclay was quarried and trucked to the plant in Vancouver, where firebrick was manufactured.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 584.

CANADIAN REFRACTORIES (Fig. J, No. 27)

By J. W. Robinson

LOCATION: Lat. 49° 03.2′ Long. 122° 17.3′ (92G/1W)
49° 03.5′ 122° 11.7′ (92G/1E)
Plant at Abbotsford; mine and quarries at Kilgard.
OWNER: DRESSER INDUSTRIES CANADA LTD. (Canadian Refractories Division), Box 160, Abbotsford.

WORK DONE: There were 400 feet of drifts and 240 feet of crosscuts driven during 1973 in the fireclay mine at Kilgard. Fireclay produced, 15,000 tons; clay produced from the Kilgard No. 9 and the Straiton pits, 69,500 tons. The resident manager is B. T. Stephens. There were six employees working underground, eight employees working in the open pit, and one supervisor, for a total of 15 at the year end.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 584.

HANEY BRICK AND TILE LIMITED (Fig. J, No. 28)

By J. W. Robinson

LOCATION: Lat. 49° 12.6' Long. 122° 35.9' (92G/2E)
On the north bank of Fraser River, at the east edge of Haney.

OWNER: HANEY BRICK AND TILE LIMITED, Box 38, Maple Ridge.

WORK DONE: Clay quarried adjacent to plant amounted to 5,694 tons during the year. This was manufactured into hollow clay drain tile, structural tile, facebrick, common brick, flue lining, and flower pots. Approximately 90 per cent of the production is hollow clay drain tile. The resident manager is A. G. Findlay. At year end there were 18 employees on the payroll.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, pp. 584, 585.

DIATOMITE

CROWNITE INDUSTRIAL MINERALS LTD. (Fig. J, No. 29)

By A. D. Tidsbury

LOCATION: Lat. 52° 57.6' Long. 122° 32.2' (93B/15E)
Four leases: W½ Lot 906, N½ of NE¼ and S½ of SE¼ of District Lot 906; Lots 1 and 2 of District Lot 222 District Cariboo Plan 6720; Lot 414; part N Lot 222 to north of 'Old Cariboo Highway.'

OWNER: CROWNITE INDUSTRIAL MINERALS LTD., Box 4159, Quesnel.

WORK DONE: The average number of employees in 1973 was 13. All mining and milling was suspended during 1973 so that major alterations and revisions could be initiated in the wet ore handling circuits. At various periods separate circuits were activated for test purposes. It is proposed to resume production in 1974 with a wider range of more closely controlled products for selected markets.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 585.

FLUORITE

IVY, CAPCO, MAY (Fig. J, No. 30)

LOCATION: Lat. 49° 30' Long. 119° 08' (82E/11E, 6E)
Report on this property under metals in section 82E/11E, 6E.

DEER, PARK (Fig. J, No. 31)

LOCATION:	Lat. 49° 20′	Long. 118° 02′	(82E/8E)

Report on this property under metals in section 82E/8E.

EAGLET (Fig. J, No. 32)

LOCATION:	Lat. 52° 34′	Long. 120° 58.5′	(93A/10W)

CARIBOO M.D. One-half mile north of the mouth of Wasko Creek, at approximately 3,500 feet elevation.

CLAIMS: EAGLET 1 to 4, 7 to 32, EAGLE 5, 6, 33, 34, 41, 42, 45 to 48.

OWNER: EAGLET MINES LIMITED, 140 Wellington Street, Ottawa, Ont.

DESCRIPTION: Fluorite occurs in alteration zones in gneiss with pegmatite.

WORK DONE: Surface diamond drilling, two holes totalling 818 feet on Eaglet 2; trenching, 1,300 feet on Eaglet 1-4 and 8; stripping, approximately 12,000 square feet on Eaglet 2.

REFERENCE: *Minister of Mines, B.C.,* Ann. Rept., 1965, p. 263.

GYPSUM

WESTERN GYPSUM LIMITED (Fig. J, No. 33)

By R. W. Lewis

LOCATION:	Lat. 50° 30′	Long. 115° 54′	(82J/5W)

GOLDEN M.D. The quarry is between 4,000 and 5,000 feet elevation, on the north side of Windermere Creek, 8 miles east of Windermere.

CLAIMS: The company holds 41 Crown-granted claims.

OWNER: WESTERN GYPSUM LIMITED, 2650 Lakeshore Highway, Clarkson, Ont.

WORK DONE:

Gypsum is mined and crushed in a primary crusher located in the quarry about 250 feet from the face. It is then conveyed overland by a series of belt conveyors to a truck loading point on the valley floor. Two 100-ton trucks haul the gypsum approximately 11 miles on paved roadway to a stockpile at the plant at Wilmer. Here secondary crushing and screening prepares the rock for loading and shipping to Calgary and Vancouver for further processing.

Some stripping above No. 2 quarry was carried out, access roads were constructed, and diamond-drill sites were established. A small amount of diamond drilling was performed ahead of No. 2 quarry in a northerly direction to the 4,400-foot elevation. Some gypsum was exposed by stripping ahead of No. 2 quarry and on the northwest side of the quarry.

A total of 400,000 tons of gypsum was mined, put through the primary crusher, and hauled to the stockpile at Wilmer; 365,249 tons of gypsum was treated at the secondary crushing and screening plant and then shipped to Calgary and Vancouver.

The company employed an average of 30 persons throughout the year.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.,* GEM, 1972, p. 596.

JADE (NEPHRITE)

Jade (nephrite) is known to occur *in situ* in serpentinite rocks and as boulders in alluvial deposits at a variety of localities in the Province.

The first jade mined was picked up by the Indians from bars along the Fraser and Bridge Rivers in the vicinity of Lillooet. Later jade was found on bars along the Fraser River as far downstream as Yale, on the Coquihalla River, and on the Bridge River as far as the junction of the Yalakom. Subsequently it was found on Hell, Marshall, and Noel Creeks, also on Kwanika, O'Ne-el, and Ogden Creeks and Mount Ogden in the Omineca; and in the north on Wheaton, Seywerd, and Thibert Creeks, on bars on the Liard River, at the Cassiar asbestos mine, and in serpentinite at the head of Blue River.

In 1973, production of jade was reported by the following individuals and companies:

Birkenhead Jade Mines Ltd., Hell Creek
Cassiar Lapidary, Cassiar
Far North Jade Ltd., Mount Ogden
R. Purvis, Lillooet
B. Seywerd, Seywerd Creek, Dease Lake
M. Stewart, Ogden Creek
New World Jade Ltd., Mount Odgen

FAR NORTH JADE (Fig. J, No. 56)

LOCATION: Lat. 55° 52′ Long. 125° 41.5′ (93N/13W)
OMINECA M.D. About 3 miles west of Mount Ogden.

CLAIMS: LF 1 to 8, LCF 1 to 10, RALF 1 to 8, VANCOUVER 1 to 7 plus Placer Mining Leases Nos. 1909 to 1911 and 1956 to 1948 on Squawkbird Creek.

OWNER: FAR NORTH JADE LTD., Box 1748, Prince George.

DESCRIPTION: Graphitic schists, limestone, and altered basalt of the Cache Creek Group are intruded by serpentinite which in turn is intruded by a large sill and numerous small dykes of granodiorite. The serpentinite and the Cache Creek rocks are strongly sheared. Lenses of nephrite, nephrite and talc, or nephrite and tremolite occur in the serpentinite at and near contacts with the Cache Creek rocks or granodiorite. The nephrite ranges in colour from green to black.

WORK DONE: During August and September 1972, the claims were geologically mapped at a scale of 1 inch equals 660 feet and detailed petrographic and mineralogic studies were made.

REFERENCE: Assessment Report 4523.

LIMESTONE

COBBLE HILL QUARRY (Fig. J. No. 34)

By W. C. Robinson

LOCATION: Lat. 48° 40.6′ Long. 123° 37.4′ (92B/12E)
At the southwest corner of Cobble Hill, 2 miles southwest of Cobble Hill Station.

OWNER: BRITISH COLUMBIA CEMENT COMPANY LIMITED, R.R. 1, Mill Bay.

WORK DONE: Limestone produced for use in Bamberton cement plant, 797,887 tons. A crew of 19 men was employed at the quarry.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 599.

IMPERIAL LIMESTONE QUARRY (Fig. J, No. 35)

By W. C. Robinson

LOCATION: Lat. 49° 44.4' Long. 124° 31.7' (92F/10E)
On the summit of the hill on Lot 500, three-quarters of a mile southeast of Spratt Bay on the north coast of Texada Island, 2 miles southeast of Vananda.

OWNER: IMPERIAL LIMESTONE COMPANY LIMITED, 5427 Ohio Avenue South, Seattle, Washington 98134.

WORK DONE: Quarry operated on Lot 500, stucco and whiting produced in plant at Vananda dock, whiting and coarse limestone produced at Spratt Bay. A crew averaging 21 men was employed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 599.

RAVEN (Fig. J, No. 35)

LOCATION: Lat. 49° 44' Long. 124° 30' (92F/10E)
South and southwest of Spratt Bay, Texada Island, at approximately 300 feet elevation.

CLAIMS: TEX 1 and 2, MOLLY, MOLLY 1 to 7, WILL 2 Fraction, WILL 3 to 6, JOE, KELLY JO Fraction, WILLY I and II.

OWNER: TEXADA LIME LTD., 309, 198 West Hastings Street, Vancouver V6B 1H2.

WORK DONE: Surface diamond drilling, 10 holes totalling 1,000 feet on Will 3 and Kelly Jo Fraction.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1971, p. 250.

IDEAL CEMENT QUARRY (Fig. J, No. 36)

By W. C. Robinson

LOCATION: Lat. 49° 42.9' Long. 124° 33.8' (92F/10E)
On Lot 25, Texada Island, about 2.5 miles south of Vananda.

OWNER: IDEAL CEMENT COMPANY (Rock Products Division), 610, 1200 West Pender Street, Vancouver.

WORK DONE: Limestone quarried, 1,208,000 tons; limestone shipped, 1,238,600 tons. During the year construction of a new crushing, screening, conveying, stockpiling, and barge-loading installation was completed. A crew averaging 39 men was employed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 600.

BEALE QUARRY (Fig. J, No. 37)

By W. C. Robinson

LOCATION: Lat. 49° 45' Long. 124° 31.9' (92F/15E)
On the north side of Texada Island, 1 mile southeast of Vananda.

OWNER: CANADA CEMENT LAFARGE LTD. (Pacific Region), 1051 Main Street, Vancouver.

WORK DONE: Limestone quarried, 1,200,000 tons; limestone shipped, 1,000,070 tons. A crew averaging 24 men was employed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 600.

DOMTAR QUARRY (Fig. J, No. 38)

By W. C. Robinson

LOCATION: Lat. 49° 47.2' Long. 124° 37.1' (92F/15E)
At the north end of Texada Island on Lots 13, 17, 22, 23, 34 to 39, 271, 305, 350, and S½ Lot 3.

OWNER: DOMTAR CHEMICALS LIMITED (Lime Division), head office, Domtar House, Montreal; quarry office, Blubber Bay.

WORK DONE: Four holes totalling 425 feet drilled on Lot 3. Limestone quarried, 1,127,800 tons; limestone shipped, 592,658 tons. A crew averaging 39 men was employed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 600.

FRASER VALLEY LIME (Fig. J, No. 39)

By J. W. Robinson

LOCATION: Lat. 49° 12' Long. 121° 43.2' (92H/4E)
On the east side of Highway 1 three-quarters of a mile east of Popkum.

OWNER: FRASER VALLEY LIME SUPPLIES, 976 Adair Avenue, Coquitlam; T. Mairs, manager.

WORK DONE: There was no production during the year. The crushing and screening plant was dismantled.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 600.

HARPER RANCH QUARRY (Fig. J, No. 40)

By E. Sadar

LOCATION: Lat. 50° 40.3' Long. 120° 03.9' (92I/9E)
North of the cement plant, 11 miles east of Kamloops.

CLAIMS: CAM 1 to 10.

OWNER: Canada Cement Lafarge Ltd.

OPERATOR: PLATEAU CONSTRUCTION LIMITED, Box 620, Kamloops.

WORK DONE: Surface sampling; production, 224,067 tons.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 601.

COLUMBIA LIME PRODUCTS (Fig. J, No. 41)

LOCATION: Lat. 51° 05.1′ Long. 121° 48.6′ (92P/4W)
At 5,200 to 5,400 feet elevation 0.25 to 0.5 mile north of Porcupine Creek, at the forks 1 mile northeast of the Kelley Lake-Jesmond road.

OWNER: COLUMBIA LIME PRODUCTS LIMITED, 535 Airport Road South, Richmond.

DESCRIPTION: The company owns a limestone quarrying lease on part of a large exposed mass of limestone mapped as the III Member of the Upper Permian Marble Canyon Formation of the Cache Creek Group. This same limestone extends for several miles to the northwest and to the southeast. Ramshead Quarries Ltd. opened up a quarry on it at a bluff 3.2 miles to the northwest in 1970. In a zone 1,600 feet thick, the upper 800 feet is pure and the rest is dolomitic and siliceous.

WORK DONE: Six diamond-drill holes, each 400 feet long, were drilled to get limestone core samples for testing; six percussion holes totalling 410 feet drilled; claims surveyed.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, Bull. 44, 1961, p. 13; GEM, 1970, p. 501.

LAREDO LIMESTONE QUARRY (Fig. J, No. 42)

By D. M. Dudas

LOCATION: Lat. 52° 41.2′ Long. 129° 03′ (103A/11E)
On Lot 299 near the centre of the northwest shore of Aristazabal Island, directly southwest of Ramsbotham Island.

OWNER: Kamad Silver Co. Ltd.

OPERATOR: THYSSEN MINING CONSTRUCTION OF CANADA LIMITED, 301 Brent Building, Regina, Sask.

WORK DONE: Twenty-five BQ diamond-drill holes 125 feet deep were drilled to determine continuity of limestone beds. There was no production during the year.

REFERENCES: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, pp. 389-392; 1972, pp. 602, 603.

TERRACE CALCIUM PRODUCTS QUARRY (Fig. J, No. 43)

By D. M. Dudas

LOCATION: Lat. 54° 30.7′ Long. 128° 28.3′ (103I/9W)
On Copper Mountain, 4.5 miles east of Terrace, at approximately 3,000 feet elevation.

OWNER: TERRACE CALCIUM PRODUCTS LTD., 66, 4625 Graham Avenue, Terrace.

WORK DONE: Limestone quarried, 400 tons; limestone shipped, 147 tons. A chip screen was completed and a start was made to assemble a washing unit. One man was employed for four months.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 603.

MAGNESITE

ROK (82J/NW-1) (Fig. J, No. 44)

LOCATION: Lat. 50° 47′ Long. 115° 39′ (82J/13E)
GOLDEN M.D. About 20 miles northeast of Radium Junction, at the confluence of Assiniboine Creek and Mitchell River and along the west flank of Mount Brussilof, between 4,300 and 4,500 feet elevation.

CLAIMS: ART 1 to 4, ART 5 Fraction, BARABAJACKAL 1 to 6, BILL 1 to 84, BMG 1 to 6 Fractions, DON 1 to 5, 8, 10 to 37, JAN 1 to 4, JOE 1 to 30, 32 to 94, MAG 1 to 27, 29, 31 to 36, NANCY 1 and 3, PAT 1 to 16, ROK 15 to 22, VANO 1 to 70, VANO 63 and 71 Fractions.

OWNERS: Baymag Mines Co. Limited and Canex Placer Limited.

OPERATOR: CANEX PLACER LIMITED, 700, 1030 West Georgia Street, Vancouver.

DESCRIPTION: Magnesite occurs as a bedded deposit in carbonate rocks of the Middle Cambrian Cathedral Formation.

WORK DONE: Road construction, approximately 14 miles (clean up of slash along Cross River access road).

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 603.

MARL

CHEAM MARL PRODUCTS (Fig. J, No. 45)

By J. W. Robinson

LOCATION: Lat. 49° 11.5′ Long. 121° 45′ (92H/4W)
Cheam Lake near Popkum.

OWNER: CHEAM MARL PRODUCTS LIMITED, 13 Fletcher Street South, Box 113, Chilliwack; P. C. Woodward, general manager.

WORK DONE: Marl produced, 18,450 tons; marl shipped, 24,123 tons; men employed, four.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 604.

PYROPHYLLITE

PYRO (92H/SE-131) (Fig. J, No. 46)

LOCATION: Lat. 49° 29.6′ Long. 120° 37.5′ (92H/7E)
SIMILKAMEEN M.D. Approximately 3 miles southeast of Coalmont, 2,000 feet east of the Coalmont-Princeton Highway, at approximately 3,500 feet elevation.

CLAIMS: ASA 1 to 5.

OWNER: DRESSER INDUSTRIES CANADA, LTD., Canadian Refractories Division, 1685 Boundary Road, Vancouver.

WORK DONE: Trenching, 1,250 feet on ASA 1; stripping, 100 feet by 100 feet on ASA 1.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1959, pp. 184, 185; *B.C. Dept. of Mines & Pet. Res.,* GEM, 1971, p. 469 (ASA).

MORRIS, MONTEITH (92L-72, 117) (Fig. J, No. 47)

LOCATION: Lat. 50° 07' Long. 127° 18' (92L/3W)
ALBERNI M.D. Eight miles northeast of Kyuquot, on the west side of Kashutl Inlet.

CLAIMS: KASHU 1 to 4, 11 to 48, 50, 55 to 80, 83 to 94.

OWNER: KENNCO EXPLORATIONS, (WESTERN) LIMITED, 730, 505 Burrard Street, Vancouver.

DESCRIPTION: Bonanza flows, tuffs, and mudstones dip moderately south to southwest, and locally have been pyritized and progressively altered to quartz sericite, quartz pyrophyllite, and quartz natroalunite rocks.

WORK DONE: Reconnaissance geological mapping; geochemical survey, 23 rock-chip samples taken at varying intervals along shorelines covering Kashu 12-16, 18, 36, 39, 45, 47, 56, 65, 70, 72, and 89.

REFERENCES: *Minister of Mines, B.C.,* Ann. Rept., 1920, p. 198; *Geol. Surv., Canada,* Summ. Rept., 1913, p. 109; Assessment Report 4539.

SAND AND GRAVEL

Data on sand and gravel production are presented on the following pages. The abbreviations used in the table for the types of sand and gravel produced are as follows: AA = asphalt aggregate; SA = sized aggregate; WS = washed and sized aggregate; S =sand; RP = run-of-pit material; CA = crushed aggregate; AP = asphalt paving mix; RM = ready-mix concrete.

Sand and Gravel Pits

Location	Operator	Equipment	Men	Production
Nelson—Anderson Creek	Premier Sand & Gravel Company Limited	Front-end loader, crushing, screening	5	RP, WS, and RM.
Creston—Goat River	Louis Salvador & Son Ltd.	Front-end loader, crushing, screening	3	RP, WS, and RM.
Castlegar—Columbia River	McGauley Ready-Mix Concrete Company	Front-end loader, screening	3	RP, WS, and RM.
Trail—Casino Road	McGauley Ready-Mix Concrete Company	Front-end loader, screening	4	RP, WS, and RM.
Trail—Marianna Crescent	H. Williamson Blacktop & Landscaping Ltd., Haney	Front-end loader, crushing, screening	5	AP.
Cranbrook—Theatre Road	Louis Salvador & Son Ltd.	Front-end loader, crushing, screening	4	RP, WS, and RM.
Cranbrook—Theatre Road	Kootenay Concrete Ltd. and A. G. Boyes Ltd.	Front-end loader, crushing, screening	5	RP, WS, and RM.
Kimberley—Meadowbrook	Fontaine's Transfer Ltd.	Front-end loader, crushing, screening	2	RP, WS, and RM.
Lang Bay—				
(1) 1 mile north of Lang Bay	Jim Hawkins, 3873 Gordon Ave., Powell River	Front-end loader, crushing, screening, washing	3	RP, CA, and WS=20,871 yd.
Powell River—				
(1) Off Allen Road, 3 miles northeast of Westview	P. Nassichuk, 7123 Alberni St., Powell River	Front-end loader, screening	1	RP and S=3,469 yd.
(2) Yukon Avenue, Cranberry Lake	John Sarnowski, R.R. 1, Powell River	Front-end loader, crushing, screening, washing	2*	RP, CA, and WS.
(3) Paradise Valley Road, Hammil Lake	D. Carto, Wilde Rd., Powell River		1*	RP.
Vancouver Island—				
(1) Campbell River—north of Buttle Lake Road at Elk Falls Road	Gord Noren Trucking Ltd., Box 345, Campbell River	Front-end loader	4*	RP=9,428 yd.
(2) Campbell River—south of Buttle Lake Road at Elk Falls Road	Antonelli Trucking Ltd., Box 189, Campbell River	Front-end loader	3	RP.
(3) Campbell River—south of Buttle Lake Road at Elk Falls Road	Upland Excavating Ltd., 1271 Cedar, Campbell River	Front-end loader, crushing, washing, screening	2	RP, CA, and WS.
(4) Painter's Spit, Campbell River	Island Ready-Mix Ltd.	High-line scraper, front-end loader, crushing, washing, screening, ready-mix	3	CA, WS, and RM=41,340 yd.
(5) Courtenay—Cumberland Road near Cumberland	W. J. Woods Trucking Ltd., Box 3157, Courtenay	Front-end loader, screening	3	RP and SA=15,960 yd.
(6) Courtenay—Cumberland Road near Cumberland	Chinook Gravel, R.R. 1, Courtenay	Front-end loader	—	RP.
(7) Courtenay—Cumberland Road near Courtenay	Island Ready-Mix Ltd.	Front-end loader, crushing, washing, screening, readymix	4	RP, CA, WS, and RM=47,027 yd.

*Part time.

Sand and Gravel Pits—Continued

Location	Operator	Equipment	Men	Production
Vancouver Island—Continued				
(8) Courtenay—Cumberland Road near Courtenay	George Bates, Bates Beach, Comox	Front-end loader, screening	1	RP and SA.
(9) Courtenay—Cumberland Road near Courtenay	R. E. Longland Trucking Ltd., Box 137, Comox	Front-end loader, screening	2	RP and SA.
(10) Cockrane Road, Qualicum Bay	Clark's Ready Mix Sand and Gravel, R.R. 1, Qualicum Bay	Front-end loader, washing, screening	2	RP and WS.
(11) Hector Road, Alberni	Dolan's Limited Sand and Gravel	Front-end loader	1*	RP.
(12) Falls Road, Alberni	Dolan's Limited Sand and Gravel	Front-end loader, crushing, washing, screening	3	RP, CA, and WS.
(13) McKenzie Road, Alberni	Dolan's Limited Sand and Gravel	Front-end loader	2	RP.
(14) Alberni	Department of Highways	Front-end loader, crushing, screening	—	RP, CA, SA, and S=46,720 yd.
(15) Church Road, Errington	G. Holland, R.R. 1, Parksville	Front-end loader	1*	RP.
(16) Errington	Department of Highways	Front-end loader, crushing, screening	—	RP, CA, SA, and S=64,572 yd.
(17) Parksville, 2 miles west	Island Pre-Cast Concrete Ltd., Box 428, Parksville	Front-end loader	1*	RP.
(18) Parksville, 2 miles west	Jim Jenkins Ltd., Box 396, Parksville	Front-end loader	1*	RP.
(19) Dumont Road, Nanaimo	Reg Dorman's Trucking & Fuel Ltd.	Front-end loader	1	RP.
(20) Dumont Road, Nanaimo	Department of Highways	Front-end loader, crushing, screening	—	RP, CA, SA, and S=140,510 yd.
(21) Dumont Road, Nanaimo	Sinclair Ganderton Contractors Ltd., 3575 Shenton Rd., Nanaimo	Front-end loader, crushing, screening	3	RP, CA, and SA=52,898 yd.
(22) McGirr Road, Nanaimo	Department of Highways	Front-end loader, screening	—	RP and S=19,000 yd.
(23) Island Highway north of Nanaimo	Island Excavating Ltd.	Front-end loader	1*	RP=2,000 yd.
(24) Extension	E. Greenaway Sand and Gravel, R.R. 1, Nanaimo	Front-end loader	1*	RP.
(25) Cassidy	Department of Highways	Front-end loader, crushing, screening	—	RP, CA, SA, and S=103,377 yd.
(26) Cassidy, ½ mile west of Island Highway, north of Nanaimo River	Hub City Paving Ltd., Box 427, Nanaimo	Front-end loader, crushing, washing, screening	6	RP, CA, and WS.
(27) Spruston Road, Cassidy	J. Milner Trucking, 1684 Chickadee Cres., Nanaimo	Front-end loader, screening	3	RP and SA.
(28) Spruston Road, Cassidy	Van-Isle Sand and Gravel	Front-end loader, crushing, screening	2*	RP, CA, and SA.
(29) Spruston Road, Cassidy	Hub City Paving Ltd.	Front-end loader	1*	RP.
(30) Rosevear Road, Duncan	North Cowichan Gravel Supplies, R.R. 4, Duncan	Front-end loader	1*	RP.
(31) Duncan—Cowichan Lake Road	Mayer Bros. Contracting Ltd., Crofton	Front-end loader, crushing, screening	3	RP, CA, and SA.
(32) Old Duncan—Cowichan Lake Road	Butler-LaFarge Ltd., Canada Ave., Duncan	Front-end loader, crushing, washing, screening, readymix	10	RP, CA, WS, and RM.

Vancouver Island—Continued				
(33) Duncan	Department of Highways	Front-end loader, crushing, screening	—	RP, CA, SA, and S=55,781 yd.
(34) Duncan—Koksilah	Armour & Saunders Limited, 2739 James St., Duncan	Front-end loader, crushing, screening, washing, readymix	10	RP, CA, WS, and RM= 127,181 yd.
(35) Cowichan Bay	Gravel Hill Supplies Ltd., 194 Kenneth St., Duncan	Front-end loader, washing, screening, readymix	8	RP, WS, and RM.
(36) Cobble Hill	Satellite Sand and Gravel Company Ltd., Cowichan Bay	Front-end loader	3	RP.
(37) Hatch Point	Thompson Ready Mix	Front-end loader, crushing, washing, screening	2	RP, CA, and WS.
(38) Goldstream—Sooke Lake Road at Humpback Road	O.K. Trucking Co. Ltd., 2840 Nanaimo St., Victoria	Front-end loader	2*	RP=17,749 yd.
(39) Goldstream—Turner Meadows	E. Nixon Ltd., 400 Burnside Rd., E., Victoria	Front-end loader, screening	2	RP and SA=71,081 yd.
(40) Keating Cross Road, Saanich	G. McHattie	Front-end loader	1	RP=30,756 yd.
(41) Keating Cross Road, Saanich	Butler Brothers Supplies Ltd., Box 4066, Station A, Victoria	Shovel, front-end loader, crushing, washing, screening, readymix	9	RP, CA, WS, and RM.
(42) Cordova Bay Road, Saanich	Trio Ready-Mix (1971) Ltd., 773 Cordova Bay Rd., Victoria	Front-end loader, crushing, washing, screening, readymix	3	RP, CA, WS, and RM= 66,868 yd.
(43) Langford Lake	G. McRae	Front-end loader, screening	2*	RP and SA.
(44) Langford	Columbia Ready-Mix Ltd., 2949 Phipps Rd., Victoria	Front-end loader, crushing, washing, screening, readymix	3	RP, CA, WS, and RM.
(45) Metchosin	Columbia Ready-Mix Ltd., 2949 Phipps Rd., Victoria	Front-end loader, screening	3	RP and SA.
(46) Metchosin	Construction Aggregates Ltd., 3497 Metchosin Rd., Victoria	Front-end loader, crushing, washing, screening	13	RP, CA, WS, and AA.
(47) Sooke—Sooke Road east of Milnes Landing	Butler Brothers Supplies Ltd., Sooke Division, Box 549, Sooke	Front-end loader, crushing, washing, screening, readymix	5*	RP, CA, WS, and RM.
Gulf Islands—				
(1) Rainbow Road, Saltspring Island	Gulf Coast Materials Ltd., Ganges	Front-end loader	1*	RP.
Coquitlam Municipality—				
(1) West end of Westwood Road	Corporation of the District of Coquitlam	Front-end loader, portable crushing, screening	1	RP and SA.
(2) Pipeline Road, 3½ miles north of Lougheed Highway	Jack Cewe Ltd., Box 1100, Coquitlam	Front-end loader, crushing, screening, paving plant	12	RP, SA, and AP.

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*Part time.

Sand and Gravel Pits—Continued

Location	Operator	Equipment	Men	Production
Coquitlam Municipality—Continued				
(3) Pipeline Road, 3 miles north of Lougheed Highway	Jack Cewe Ltd., Box 1100, Coquitlam		0	RP.
(4) Pipeline Road, 3 miles north of Lougheed Highway	Columbia Bitulithic Ltd., Box 4225, Station D, Vancouver 9		0	RP.
(5) Pipeline Road, 3 miles north of Lougheed Highway	Allen Contracting Ltd., R.R. 1, Pipeline Rd., Port Coquitlam	Front-end loader, trucks, crushing, screening	5	RP and SA.
(6) Pipeline Road, 1½ miles north of Lougheed Highway	Allard Contractors Ltd., Box 47, Port Coquitlam	Front-end loader, crushing, screening	5	RP and SA.
(7) Pipeline Road, 1 mile north of Lougheed Highway	Canada Cement Lafarge Ltd., 1051 Main St., Vancouver	Dragline, front-end loaders, trucks, crushing, washing, screening, readymix	9	SA, WS, and RM=600,000 yd.
(8) Pipeline Road, 4 miles north of Lougheed Highway	Allard Contractors Ltd., Box 47, Port Coquitlam	Shovel, trucks	2*	RP.
(9) Fraser River at Mary Hill, 2 miles south of Port Coquitlam	Construction Aggregates Ltd., 850 South West Marine Drive, Vancouver 14	Shovels, front-end loader, trucks, processing plant, barge loading facilities	60	WS, CA, and SA.
Annacis Island—				
Fraser River at Annacis Island	Willson Construction Company Limited, 4084—48th Ave., Ladner	Front-end loader	2	S.
Maple Ridge Municipality—				
(1) 33rd Road, 1 mile south of Silver Valley	S. Berto, R.R. 2, Maple Ridge	Front-end loader, trucks	1*	RP.
(2) Grant Hill, 1 mile east of Albion and also adjoining Kirkpatrick pit	Corporation of the District of Maple Ridge	Front-end loader, crushing	—	RP and SA.
(3) Grant Hill, ¾ mile north of municipal pit	Williamson Blacktop and Landscaping Ltd., Haney	Front-end loader, crushing, screening	—	RP and SA.
(4) Grant Hill, ½ mile north of municipal pit	Allard Contractors Ltd., Box 47, Port Coquitlam	Front-end loader, crushing, washing, screening	2	WS.
(5) Lougheed Highway south of Grant Hill	Walske Ready-Mix Ltd., 23616 River Rd., Haney	Shovel, front-end loader, crushing, washing, screening, readymix, mixer trucks	20	WS and RM.
(6) Albion	Columbia Bitulithic Ltd., Box 4225, Station D, Vancouver 9	Shovel, front-end loader, crushing, washing, screening, readymix, mixer trucks	20	WS and RM.

Maple Ridge Municipality—Continued				
(7) Alouette River, east end of 27th Street	Kirkpatrick Sand & Gravel Co. Ltd., 22357 McIntosh St., Haney	Front-end loader	2*	RP.
(8) 1 mile north of Websters Corners, ½ mile east	Kirkpatrick Sand & Gravel Co. Ltd., 22357 McIntosh St., Haney	Shovel, washing, screening	2*	RP and WS.
(9) Maple Ridge, east of 284th Street	C. Cozens, Maple Ridge		—	RP.
(10)	Various operators, but owned by L. J. Donatelli, 29579 Lougheed Highway, R.R. 2, Mission	Front-end loaders, trucks	4*	RP.
Mission Municipality—				
(1) 2.3 miles south of Steelhead, Dewdney Trunk Road	Cannon Contracting Ltd., Box 178, Mission	Front-end loader, crushing, screening	2*	RP and SA.
(2) 2.2 miles south of Steelhead, Dewdney Trunk Road	M. Catherwood, R.R. 1, Mission		1*	RP.
(3) 1 mile east of Stave Falls powerhouse	Corporation of the District of Mission		—	S.
(4) 3 miles east of Stave Falls powerhouse	Corporation of the District of Mission		—	RP.
(5) 2 miles east of Ruskin powerhouse	Corporation of the District of Mission	Front-end loader	2	RP and SA.
(6) Mission	Department of Highways, Chilliwack	Front-end loader, screening	—	RP and SA.
Kent Municipality—				
(1) West of Cemetery Road, south of Mount Agassiz	Corporation of the District of Kent	Shovel	2	RP.
(2) McCallum Road, 1½ miles west of Harrison Hot Springs Road	Danielson Contracting Ltd., McCallum Rd., R.R. 1, Agassiz	Front-end loader	2*	RP.
(3) McCallum Road	Department of Highways, Chilliwack	Front-end loader, screening	1	RP and SA.
(4) Fraser River bar, directly south of Agassiz	Morrow's Trucking and Reddi-Mix Ltd.	Front-end loader, trucks, screening	3	RP, SA, and RM=7,000 yd.
(5) 1 mile north of Agassiz	Department of Highways	Front-end loader, trucks	2	RP.
(6) ½ mile south of Rosedale—Agassiz Bridge	Department of Highways	Front-end loader, trucks	2	RP.
(7) ½ mile west of Hunter Creek	Department of Highways	Front-end loader, trucks	2	RP.
Indian Reserve No. 1—Cheam View	Various operators	Front-end loader, trucks	2*	RP.
Chilliwack Municipality—				
(1) Arnold Road, bank of Fraser River	P. Heppner & Son Trucking Ltd., 7113 Sumas Prairie Rd., Sardis	Front-end loader	2*	RP.

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*Part time.

Sand and Gravel Pits—Continued

Location	Operator	Equipment	Men	Production
Chilliwack Municipality—Continued				
(2) Fraser River bars, etc.	Chilliwack Gravel Sales Ltd.	Bucket-line dredge, front-end loader, screening plant	3	RP and WS.
Sumas Municipality—				
At foot and east of Taggart Peak	P. Heppner & Son Trucking Ltd., but owned by H. Quadling, R.R. 1, Yarrow	Front-end loader, screening	5*	RP and SA.
Matsqui Municipality—				
(1) 1 mile east of Abbotsford	Blackham's Construction Limited, Box 39, Abbotsford	Front-end loaders, screening, washing, crushing	9	RP, SA, and WS=141,765 yd.
(2) Trethewey Road, ¾ mile north of Clearbrook	Department of Highways, Chilliwack	Front-end loader, screening	4	RP and SA.
(3) Clearbrook Road, ½ mile north of border	Abbotsford Gravel Sales Ltd., Box 8, Abbotsford	Scraper, front-end loader, screening, washing, readymix plant of Totem Trucking Ltd.	3	WS, RP, and RM.
(4) 12th Avenue, ¼ mile west of Clearbrook Road	Valley Rite-mix Ltd., Box 430, Clearbrook	Scraper, front-end loader, screening, washing, crushing, readymix plant	4	RP, SA, WS, and RM.
(5) Corner of LeFeuvre Road and Eighth Avenue, Caplette pit	Ernie's Trucking Ltd., Box 365, Aldergrove	Front-end loader	1	RP.
(6) LeFeuvre Road	Corporation of the District of Matsqui	Front-end loader, crushing, screening	–	RP and SA.
Langley Municipality—				
(1) Kinch Road at 36th Avenue and Jackman Road	Corporation of the Township of Langley	Front-end loader, crushing, screening	4	RP and SA.
(2) North of the northeast corner of Jackman Road and Eighth Avenue	Aldergrove Cement Tile Products, 2437–272nd St., R.R. 1, Aldergrove	Front-end loader, screening	1*	RP, WS, and Topsoil.
(3) Dogwood Avenue, off Brown Road	Kitsui Bros. Gravel Sales Ltd., 24306 Fraser Highway, R.R. 3, Langley	Front-end loader	2*	RP and S.
(4) 8802 Hudson Bay Road, Fort Langley	Clark Gravel & Ready Mix Ltd., Box 855, Langley	Front-end loader, crushing, screening, washing	3	RP, WS, and RM.
(5) 2962 Lambert Road, Highland pit	Construction Aggregates Ltd., 850 South West Marine Drive, Vancouver 14	Dragline, front-end loader, crushing, screening, washing	8	RP, WS, and SA.
(6) 32nd Avenue at Kinch Road	Oscar Rees Gravel Sales Ltd., Box 847, Langley	Dragline, front-end loader, screening	5	RP and SA.
(7) Boundary Road at Surrey boundary	Border Sand & Gravel Ltd., Boundary Ave., R.R. 2, White Rock	Front-end loader, crushing, screening	3	RP, SA, and WS=61,237 yd.

Surrey Municipality—				
(1) Campbell River Road at Langley boundary	White Rock Sand & Gravel Ltd., 2546—176th St., R.R. 2, Cloverdale	Shovel, front-end loader, screening, washing	3	RP, SA, and WS.
(2) 24th Avenue at Langley boundary	Corporation of the District of Surrey	Front-end loader	—	RP and SA.
(3) 160th Street, south of 24th Avenue	Corporation of the District of Surrey	Front-end loader	—	RP.
(4) 53rd Avenue at Delta boundary	Corporation of the District of Surrey	Front-end loader	—	RP.
(5) 28th Avenue at 194th Street	Corporation of the District of Surrey	Front-end loader	—	RP.
(6) 96th Avenue at Langley boundary	Corporation of the District of Surrey	Front-end loader	—	RP and SA.
Delta Municipality				
(1) ½ mile west of Scott Road at 68th Street	Standard-General Construction Limited, 6631—120th St., North Surrey	Front-end loaders, crushing, screening washing	2	RP, WS, and SA.
(2) 10720—84th Avenue	M. & W. Sand & Gravel Ltd., 948 Beckwith Road, Richmond	Front-end loader	—	RP.
(3) Fraser River at Annieville	Sabre Bulldozing Ltd., 719 No. 3 Rd., Richmond	Front-end loader	2	S.
Howe Sound—				
(1) Britannia Beach	Construction Aggregates Ltd., 850 South West Marine Drive, Vancouver 14	Bulldozers, front-end loaders, trucks, crushing, washing, screening	30	WS, RP, and SA.
(2) Furry Creek	Construction Aggregates Ltd., 850 South West Marine Drive, Vancouver 14	Bulldozers, front-end loaders, trucks, crushing, screening, washing	19	SA and WS.
(3) Mamquam River	Coast Aggregates Ltd., Squamish	Front-end loader, trucks, crushing, screening	3	RP and SA.
(4) North of Cemetery Road, Gibsons	Universal Aggregate Ltd., Box 323, Gibsons	Front-end loader, crushing, screening	2	RP and SA.
(5) Cemetery Road, Gibsons	P. & W. Development Ltd., Box 248, Gibsons	Front-end loader, crushing, screening, readymix	1*	RP and RM.
(6) Veterans Road, Gibsons	Gibsons Building Supplies Ltd., Gibsons	Front-end loader, crushing, screening, washing	3	RP and WS.
(7) South of Sechelt Highway, west of Veterans Road, Gibsons	Gibsons Building Supplies Ltd., Gibsons	Front-end loader	1*	RP.
(8) Porpoise Bay Road, Sechelt	L. & H. Swanson Ltd., Box 172, Sechelt	Front-end loader, trucks, screening, readymix	14	RP, SA, and RM=17,990 yd.
Jervis Inlet—Treat Creek	Delta Rock Ltd., Box 1100, Coquitlam	Front-end loaders, crushing, screening	10	RP and SA.

*Part time.

Sand and Gravel Pits—Continued

Location	Operator	Equipment	Men	Production
Fort St. John Highways District—				
Fort St. John Area				
(1) Hudson Hope Right-of-way	Department of Highways	Truck, loader	2	RP=23 yd.
(2) Charlie Lake	Department of Highways	Truck, loader	2	RP=5 yd.
(3) Clark pit	Department of Highways	Truck, loader, screening plant	4	S=1,000 yd.
(4) Mile 62	Department of Highways	Truck, loader	2	RP=60 yd.
(5) Montney pit	Department of Highways	Truck, loader	2	RP=125 yd.
(6) Mile 92	Department of Highways	Truck, loader, screening plant	4	S=25 yd.
(7) Mason pit	Department of Highways	Trucks, loader, Department crusher	7	CA=5,145 yd.
(8) Leahy pit	Department of Highways	3 trucks, loader	4	RP=2,240 yd.
(9) Cameron pit	Department of Highways	Truck, loader	2	RP=25 yd.
(10) Trotter pit	Department of Highways	Truck, loader	2	RP=50 yd.
(11) Beatton River	Department of Highways	3 trucks, loader, Caterpillar	5	RP=8,018 yd.
(12) Osborne	Department of Highways	2 trucks, loader	3	RP=380 yd.
(13) Lundquist	Department of Highways	Trucks, loader, crusher	6	CA=8,129 yd.
(14) Imperial pit	Imperial Oil Limited	Trucks, loader	4	RP=6,000 yd.
(15) Imperial pit	Texaco Canada Limited	Trucks, loader	4	RP=338 yd.
(16) Imperial pit	Texaco Canada Limited	Trucks, loader	4	RP=5,156 yd.
(17) Buick Creek	Texaco Canada Limited	Trucks, loader	4	RP=1,000 yd.
(18) Nig Creek	Texaco Canada Limited	Trucks, loader	4	RP=2,200 yd.
Fort Nelson Area				
(1) Mile 295 pit	Department of Highways	Truck, loader, Caterpillar, screening plant	3	S=1,500 yd.
(2) Mile 295	Nylander Trucking	Trucks, loader	4	RP=5,990 yd.
(3) Mile 295	Gladys Haude	Trucks, loader	4	RP=1,196 yd.
(4) Mile 235 (D.P.W. pit)	Permanent Concrete	Trucks, loader	4	RP=4,250 yd.
Atlin North Area				
(1) Kent pit	Department of Highways	2 trucks, loader	3	RP=588 yd.
(2) Tomkins pit	Department of Highways	Truck, loader	2	RP=60 yd.
(3) Dease pit	Department of Highways	Trucks, loader, Department crusher	7	CA=22,638 yd.
(4) Mudhill pit	Department of Highways	Trucks, loader, Department crusher	7	CA=1,710 yd.
(5) Snow Creek pit	Department of Highways	Trucks, loader, Caterpillar	4	RP=270 yd.
(6) Deep Creek pit	Department of Highways	Trucks, loader, Department crusher	7	CA=31,350 yd.
(7) 32 Mile pit	Department of Highways	Trucks, loader, Department crusher	7	CA=28,850 yd.
(8) Camp pit	Department of Highways	Trucks, loader	4	RP=1,140 yd.

Fort St. John Highways District—Continued				
Atlin North Area				
(9) 20 Mile	Department of Highways	Trucks, loader	4	RP=7,000 yd.
(10) Elbow Creek	Department of Highways	Trucks, loader	4	RP=330 yd.
(11) Beatty Creek	Department of Highways	Trucks, loader	4	RP=150 yd.
(12) Ward Hill	Department of Highways	Trucks, loader	4	RP=470 yd.
(13) Heslop	Department of Highways	Trucks, loader	4	RP=300 yd.
(14) Surpentine	Department of Highways	Trucks, loader	4	RP=100 yd.
(15) Tuya pit	Department of Highways	6 trucks, loader	8	RP=11,942 yd.
(16) Skowell pit	Department of Highways	6 trucks, loader	8	RP=43,304 yd.
(17) Watson pit	Department of Highways	6 trucks, loader	8	RP=922 yd.
(18) Deltaic pit	Department of Highways	6 trucks, loader, Department crusher	10	CA=22,000 yd.
(19) Knat pit	Department of Highways	6 trucks, loader, Department crusher	10	CA=15,000 yd.
(20) Moose pit	Department of Highways	6 trucks, loader, Department crusher	10	CA=3,860 yd.
(21) Dry Creek pit	Department of Highways	6 trucks, loader	8	RP=2,500 yd. S=2,000 yd.
Terrace Highways District—				
(1) Mile 1, Old Lakelse Lake Road	Department of Highways	2 trucks, loader, crusher	6	CA=5,208 yd.
(2) Mile 2.6, Highway 16 East, pit 3	Department of Highways	4 trucks, loader	5	AP=3,000 yd. RP=2,000 yd. CA=2,000 yd.
(3) Junction of Queensway and Remo Road, Highway 16, pit 5	Department of Highways	5 trucks, loader	6	RP=5,000 yd.
(4) Usk	Department of Highways	2 trucks, loader	3	RP=500 yd.
(5) Mile 42, Highway 16 West, pit 19	Department of Highways	8 trucks, loader, bulldozer	14	Rock=25,000 yd.
(6) Mile 4, South Terrace Highway 25, pit 20	Department of Highways	4 trucks, loader	5	RP=3,000 yd.
(7) Mile 3.2, Kalum Lake Road	Department of Highways	4 trucks, loader	5	RP=2,000 yd.
(8) Rosswood, Kalum Lake Road, pit 26	Department of Highways	3 trucks, loader	4	RP=2,000 yd.
(9) Kitimat, pit 33	Department of Highways	5 trucks, loader	6	CA=3,000 yd.
(10) South End Kalum Lake, pit 34	Department of Highways	4 trucks, loader	5	RP=3,000 yd.
(11) Exstew River, Highway 16, pit 40	Department of Highways	8 trucks, loader	12	RP=12,000 yd.
(12) Polymar Bar, Skeena River, pit 43	Department of Highways	8 trucks, loader	12	RP=36,000 yd.
(13) Old Remo, Highway 16, pit 44	Department of Highways	3 trucks, loader	4	RP=3,000 yd.
(14) Polymar Creek, Highway 16, pit 48	Department of Highways	11 trucks, 2 loaders, bulldozer	17	RP=154,000 yd.
(15) Salvus Camp, Highway 16, pit 48	Department of Highways	6 trucks, loader, bulldozer	9	RP=28,000 yd.
(16) Mile 24, Highway 16 West	Department of Highways	Loader, bulldozer	9	RP=131,000 yd.

*Part time.

Sand and Gravel Pits—Continued

Location	Operator	Equipment	Men	Production
Prince Rupert Highways District—				
(1) Alice Arm—Kitsault Road pit	Department of Highways	Front-end loader, truck	1	RP=960 yd.
(2) Queen Charlotte Islands, Ross pit	Department of Highways	Front-end loader, 3 trucks	4	S=965 yd. RP=3,627 yd.
(3) Queen Charlotte Islands, Yellow pit	Department of Highways	Front-end loader, 2 trucks	3	RP=1,776 yd.
(4) Queen Charlotte Islands, Masset D.L. 807A, 807, 808	Department of Highways	Front-end loader, 2 trucks	3	RP=1,305 yd.
(5) Queen Charlotte Islands, Construction pit, D.L. 803 and 799	Department of Highways	Front-end loader, truck	2	RP=613 yd.
(6) Queen Charlotte Islands, Tlell Private Property	Department of Highways	Front-end loader, 3 trucks	4	S=6,960 yd.
(7) Queen Charlotte Islands, St. Mary's pit, D.L. 591, 592, 593	Department of Highways	Front-end loader, 2 trucks	3	RP=997 yd.
(8) Highway 16, Green River pit	Department of Highways	Front-end loader, 2 trucks	3	S=1,600 yd.
(9) Highway 16, Prince Rupert pit	Department of Highways	Front-end loader, truck	2	Rock=110 yd.
(10) Highway 16, Prudhome Lake pit	Department of Highways	Front-end loader, 2 trucks	3	Rock=3,406 yd.
(11) Highway 16, D.L. 446	Department of Highways	Front-end loader, 2 trucks	3	Rock=766 yd.
(12) Highway 16, Mile 58 pit	Department of Highways	Front-end loader, 2 trucks	3	Rock=7,270 yd.
(13) Highway 37, Surprise Creek pit	Department of Highways	Front-end loader, 2 trucks	3	RP=54,000 yd.
(14) Highway 37, Bear River 2 pit	Department of Highways	Front-end loader, 3 trucks	4	RP=7,000 yd.
(15) Highway 37, Nass Road—Meziadin Lake pit	Department of Highways	Front-end loader, 9 trucks	10	RP=42,240 yd.
(16) Highway 37, Deltaic pit	Department of Highways	Front-end loader, 12 trucks	13	RP=31,000 yd.
(17) Highway 37, Bell Irving 2 pit	Department of Highways	Front-end loader, 10 trucks	11	RP=60,000 yd.
Commercial Pits				
(18) Sandhill—Kitimat	Ocean Construction Supplies, Northern Limited, Kitimat	5—yard Sauerman scraper and hoist, H90E loader, TD7 tractor	5*	CA and RP.
(19) Sandhill—Kitimat	L. G. Scott and Sons Construction Ltd., Kitimat	Caterpillar 950 front-end loader, D—8 Caterpillar, Hough—120 front-end loader, 12—yard truck, jaw and roll crusher	4*	CA and SA=71,000 tons.
(20) Foreshore Lease, Matlakatla Bar	Armour Salvage (1949) Ltd. and Rivtow Straights Limited	Tug, derrick, and scow	2*	RP=84,152 yd.
Foreshore Lease, Upper Tuck Inlet Bar	Armour Salvage (1949) Ltd. and Rivtow Straights Limited	Tug, derrick, and scow	2*	RP=7,946 yd.

Prince Rupert Highways District—Continued				
Commercial Pits				
Foreshore Lease, North Metlakatla Bar	Armour Salvage (1949) Ltd. and Rivtow Straights Limited	Tug, derrick, and scow	2*	RP=3,006 yd.
Foreshore Lease, Monicol Creek	Armour Salvage (1949) Ltd. and Rivtow Straights Limited	Tug, derrick, and scow	2*	S=51,871 yd.
Foreshore Lease. Secret Cove	Armour Salvage (1949) Ltd. and Rivtow Straights Limited	Tug, derrick, and scow	2*	WA=12,829 yd.
Foreshore Lease, Useless Bay	Armour Salvage (1949) Ltd. and Rivtow Straights Limited	Tug, derrick, and scow	2*	WA=12,866 yd.
Foreshore Lease, Skeena River	Armour Salvage (1949) Ltd. and Rivtow Straights Limited	Tug, derrick, and scow	2*	S=479 yd.
Foreshore Lease, Refuge Bay	Armour Salvage (1949) Ltd. and Rivtow Straights Limited	Tug, derrick, and scow	2*	S=500 yd.
Foreshore Lease, Pearl Harbour	Armour Salvage (1949) Ltd. and Rivtow Straights Limited	Tug, derrick, and scow	2*	S=693 yd.
(21) L. H. & K. pit—Terrace	L. G. Scott & Sons Construction Ltd., Kitimat	Caterpillar 950 front-end loader, Hough—120 front-end loader,, 12—yard truck, E—1 Jay Cone crusher, washing plant	5	CA, SA, and WA=185,000 tons.
(22) Smithers pit	L. G. Scott & Sons Construction Ltd., Kitimat	Hough—120 front-end loader, 12—yard truck, E—1 Jay Cone crusher	3*	CA and SA=64,000 tons.
(23) Froese pit—Terrace	Vic Froese Trucking Ltd., Terrace	922 Caterpillar loader and trucks	2*	RP.
(24) Farko pit—Terrace	Buds Trucking, Terrace	922 Caterpillar loader and trucks	3*	RP.

***Part time.**

SILICA

SIL (Fig. J, No. 48)

LOCATION: Lat. 49° 02′ Long. 118° 38′ (82E/2E)
GREENWOOD M.D. Three and three-quarters miles southwest of Greenwood, astride McCarren Creek at 3,750 feet elevation.
CLAIMS: SIL 1 to 8.
OWNER: J. C. Allen.
OPERATOR: SILCAN RESOURCES LTD., Box 816, 208 Professional Building, Lethbridge, Alta.
DESCRIPTION: A small impure body of quartz occurs in phyllite near a diorite dyke.
WORK DONE: Geological mapping at 1 inch equals 600 feet on all claims.
REFERENCE: Assessment Report 4795.

SUSIE (82E/SW-90) (Fig. J, No. 49)

LOCATION: Lat. 49° 13′ Long. 119° 36′ (82E/4E)
Report on this property under metals in section 82E/4E.

SHEEP CREEK CAMP (Fig. J, No. 50)

By P. E. Olson

LOCATION: Lat. 49° 09′ Long. 117° 04′ (82F/3E)
NELSON M.D. Nine miles east-southeast of Salmo, on Curtis Creek between 4,000 and 4,700 feet elevation.
CLAIMS: BABE 1 to 10 located mineral claims on Curtis Creek and various other claims around the Sheep Creek Camp.
OWNERS: D. R. SIMMONS, Box 375, Vernon, and J.A.C. ROSS & ASSOCIATES, Vancouver.
WORK DONE: Quartzite talus was crushed and hauled to the Trail smelter, mainly from the Curtis Creek area, for use as smelter flux.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 48.

RICE (QUARTZ MOUNTAIN) (Fig. J, No. 51)

LOCATION: Lat. 49° 34′ Long. 116° 04′ (82F/9E)
Report on this property under metals in section 82F/9E.

MOUNT ROSE SILICA (Fig. J, No. 52)

By David Smith

LOCATION: Lat. 50° 26.5′ Long. 119° 17′ (82L/6W)
VERNON M.D. Four miles west of Armstrong at 2,630 feet elevation on Mount Rose.
CLAIMS: METRO 1 to 3, IVAN 4 to 11, ROVER 1 to 4.
OWNER: MOUNT ROSE MINING CO. LTD., Vernon (M. Wilkinson and L. Wilkinson).

DESCRIPTION: A quartz vein occurs in a quartz diorite intrusion in phyllite.
WORK DONE:

Quartz is quarried from a 15 to 20-foot high face, loaded, and trucked to a crushing and screening plant at the foot of the access road.

Development and exploration work: stripping overburden across southwest end of the quartz outcrop; preparation of second 20-foot bench; five vertical test holes drilled to a depth of approximately 50 feet at 50-foot spacing parallel to the strike of the vein.

Additional dust extraction equipment was installed. Extensions were made to the bulk loading facilities and rail spur.

Approximately 3,368 tons was shipped for metallurgical use and as chips for stucco dash, exposed aggregate, and similar uses. An average of four was employed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 406.

HUNT (82N-43) (Fig. J, No. 53)

LOCATION: Lat. 51° 12.6′ Long. 116° 51.8′ (82N/2W)
GOLDEN M.D. Between 3,100 and 4,100 feet elevation, at the mutual junction of Sections 9, 10, 15, and 16 of Township 26, Range 21, west of the 5th meridian, one-quarter to 1 mile south of Horse Creek, and 1 mile east of Highway 95, 7.3 miles southeast of Golden.
CLAIMS: Lot 1540, consisting of the HUNT 4A, 5A, and 6A mineral claims.
OWNER: C. WARREN HUNT, 1119 Sydenham Road, Calgary, Alta.
DESCRIPTION: The claims cover an area underlain by pure quartzite of the Ordovician Mount Wilson (Wonah) Formation, associated with dolomite of the Beaverfoot Formation.
WORK DONE: Percussion drilling, three holes totalling 30 feet on Hunt 5A.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 511.

BUSE LAKE QUARRY (Fig. J, No. 54)

By E. Sadar

LOCATION: Lat. 50° 37.3′ Long. 120° 01.5′ (92I/9E)
KAMLOOPS M.D. At the southeast corner of Buse Lake, 14 miles east-southeast of Kamloops.
CLAIMS: BUSE 1 and 2.
OWNER: Canada Cement Lafarge Ltd.
OPERATOR: PLATEAU CONSTRUCTION LIMITED, Box 620, Kamloops.
WORK DONE: Diamond drilling, 4,100 feet; production, 28,928 tons.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 617.

TALC

H (Fig. J, No. 55)

LOCATION: Lat. 50° 03′ Long. 121° 38′ (92I/4E)
Report on this property under metals in section 92I/4E.

5

COAL

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GENERAL REVIEW OF COAL MINING AND EXPLORATION

By G. L. Bell

INTRODUCTION

The principal coal resources of the Province occur in comparatively narrow linear belts within the intermontane basins of the East Kooenay area and the inner foothills region of northeastern British Columbia. Total prospective area is in the order of 1,900 square miles. These deposits, chiefly of Lower Cretaceous age, contain major *in situ* 'reserves' of medium and low volatile bituminous coal, generally suitable for production of metallurgical coke.

Rapid growth in world demand for coking coal during the late 1960's resulted in unprecedented development of new mine capacity in British Columbia, coupled with modernization of rail and port facilities to support large-scale operations. Significant growth of export shipments commenced in 1970. In 1973, two major mines, Kaiser Resources Ltd. and Fording Coal Limited, produced a combined total of about 10.8 million tons raw coal, chiefly from large open-pit operations. Residual clean coal product, totalling some 7.7 million tons, yielded a mine value of $88 million; 96 per cent of total output was exported to Japan.

Total coal exploration activity and expenditure increased during 1973, and a number of advanced exploration and development feasibility programmes resulted in establishment of important new mineable reserves. Approximately 900,000 acres of coal licence lands was held at year end.

In addition to major reserves of potential metallurgical coal, several comparatively small or localized deposits of lignite and sub-bituminous 'thermal' coal occur in widely scattered areas of British Columbia. While there are no current developments in this respect, future investigation of several of these deposits for base-load power development purposes is anticipated as competitive energy costs continue to increase.

GEOLOGY AND MINING:

Coal deposits of the Kootenay Formation in the Crowsnest Pass area and in the Gething and Gates Formations of northeastern British Columbia occur in structurally complex foothills and mountainous terrain. Distribution and extent of the main stratigraphic units are controlled by extensive regional faults and *en echelon* folds, resulting in comparatively narrow elongated belts in which coal-bearing strata are exposed and segregated by erosion in moderate to high-relief terrain. Varying depositional patterns, resulting from coal accumulation in prograding deltaic and alluvial plain environments affect seam continuity, extent, and thickness in both a regional and local context. There is a broad spectrum of combined structural and stratigraphic effects, ranging from mildly flexed strata of relatively uniform characteristics to the steeply inclined, highly deformed, crushed, and friable deposits which are typical of the 'mountain' coals. Coking properties of the coal may be relatively constant, or vary somewhat in response to composition. Commonly, FSI values are low where the seam is exposed in outcrop, and coking properties may be destroyed in the more structurally deformed deposits through deep oxidation by circulating ground waters.

The Kootenay coal measures which underlie the Fernie and Elk River basins contain 10 or more mineable seams, with aggregate thickness in excess of 150 feet. Of these, the Balmer and correlative seams which occur at the base of the sequence may be up to 50 feet thick, and this factor, together with favourable strip-ratios in the currently developed mine areas, accounts for most of the reserves committed to date. The Kootenay coals generally exhibit good coking characteristics and are low in sulphur.

Regional potential of the Gething and Gates Formations is less well defined. However, a combined total of at least seven mineable seams of medium and low-volatile bituminous coking coal has been identified along much of the foothills belt southeastward from Peace River to the Alberta border. Prospective mine areas which have been most thoroughly investigated to date are situated within broadly synclinal, structurally less-deformed blocks, which appear amenable to underground mining. Other local areas, situated along thickened fold limbs, appear to offer attractive open-pit potential.

The intensively mechanized, high-capacity surface-mining operations developed in the East Kootenays emphasize the importance of accurate pre-production assessment of structural, stratigraphic, and quality control aspects of reserve evaluation. These factors, together with intensive mine planning and systems and plant design, are essential in meeting throughput and coal specification requirements of a successful metallurgical coal operation. Continued success of hydraulic mining systems by Kaiser Resources Ltd. holds promise for future underground development of thick steeply inclined seams.

Local deposits of lignite, sub-bituminous, and high-volatile bituminous coals, of Upper Cretaceous and Tertiary age, occur in widely scattered areas of British Columbia. Size and economic potential of these, including possible reserves in the former coal-mining areas of Vancouver Island, are comparatively small, although of potential value for base-load power development as energy costs continue to increase. Deposits planned for investigation include Hat Creek, Princeton-Tulameen, Suquash, and Comox – Tsable River.

RESERVES

As of December 31, 1973, total coal resources of British Columbia on a geological *in situ* basis were estimated at 65.3 billion tons in all categories (measured, indicated, and inferred).* Of this, medium and low-volatile bituminous, potential metallurgical coking coal accounted for some 62.0 billion tons, representing about 95 per cent of the known provincial resource and about 69 per cent of the Canadian total of this class. Assessment of 'thermal' lower rank coals (lignite, sub-bituminous, and high-volatile bituminous) is limited by lack of reliable data; on a very provisional basis, the *in situ* resource is estimated to total 3.3 billion tons of inferred and possible 'thermal' coal and this will likely be expanded substantially as new exploration proceeds in response to increasing demand.

Proven and mineable reserves of metallurgical coking coal, based on existing extraction technology and economics, are estimated provisionally at 1.45 billion short tons. This figure represents only 19 per cent of the measured resource, and can be expected to increase substantially in response to development of mine inventories, or as technological and economic factors change. On the most conservative basis, this 'shelf-inventory' position, after adjustment for mining extraction and beneficiation factors, represents some 805 million short tons of metallurgical coal product. On the basis of currently contracted annual production of 8.4 million tons, the reserves represent sufficient supply for 96 years of operation, or, to state the potential in different terms, would support a mining rate of 43 million tons per year (yielding 32 million tons of product coal annually) for the next 25 years to 2000 AD.

Reserve studies, including revision of resource estimates and refinement of mining, economic, and utilization factors in assessment of reserve categories, were continued during 1973.

DEVELOPMENT AND EXPLORATION

During the middle and late 1960's increased world demand for metallurgical coal and need for suppply diversification by the Japanese steel industry, provided incentive for Western Canadian coal operators to undertake development of new and existing mines, and to finance or support modernization and construction of rail and port facilities required for large-scale coal-export operations.

The first significant production increase occurred during 1970 when Kaiser Resources Ltd. commenced shipment at a projected annual rate of 5 million long tons under a 15-year contract with Mitsubishi Corporation. Various technical problems in maintaining productivity and coal specifications, together with various rail and sea shipping disruptions, curtailed production during the first 30 months of full operation; however, these difficulties had been mostly overcome by late 1972, and improvement of the company's financial position, resulting from equity re-financing, increased export prices, and improved operational profitability, was achieved during the latter part of 1973.

* Revised and up-dated from Latour, B. A. and Chrismas, L. P., Preliminary Estimate of Measured Coal Resources including Reassessment of Indicated and Inferred Resources in Western Canada, *Geol. Surv., Canada*, Paper 70-58.

TABLE 1 – COAL PRODUCTION AND DISTRIBUTION BY COLLIERIES, 1973

(adapted and modified from Table 8B, Annual Report of the Minister of Mines and Petroleum Resources)

	Raw Coal Production			Clean Coal Production		Coal Used		Coal Sales				Total Coal – Sold and Used		
	Surface	Underground	Total	Clean Coal Production		Plant Use & Misc.	Coke Making	Canada	Japan	Others	Total Sales	Amount	Total Value	Average Value
	Tons	Tons	Tons	Tons	%	Tons	Tons	Tons	Tons	Tons	Tons	Tons	$	$ per Ton
SOUTHEAST BRITISH COLUMBIA														
Coleman Collieries Ltd.	65,735	------	65,735	51,016	77.6	------	------	------	51,016	------	51,016	51,016	602,840	11.82
Fording Coal Limited	3,793,571	------	3,793,571	2,390,206	63.0	------	------	------	2,295,998	224	2,296,222	2,296,222	22,962,217	10.00
Kaiser Resources Ltd.	5,767,389	1,235,270	7,002,659	5,330,848	76.1	4,200	247,542	74,690	4,959,313	------	5,034,003	5,285,745	64,407,823	12.19
NORTHERN BRITISH COLUMBIA														
Coalition Mining Limited	32,674	------	32,674*	------	---	------	------	------	------	------	------	------	------	---
Bulkley Valley Colliery Ltd.	------	300	300	268	89.3	------	------	268	------	------	268	268	3,216	12.00
TOTALS, 1973	9,659,369	1,235,570	10,894,939	7,772,338	---	4,200	247,542	74,958	7,306,327	224	7,381,509	7,633,251	87,976,106	11.53
Per Cent of 1973 Totals	88.7%	11.3%	100.0%	71.3%	---	0.1%	3.2%	1.0%	95.7%	------	96.7%	100.0%	------	---
TOTALS, 1972	8,050,678	1,022,272	9,072,960	6,577,466	---	17,963	203,820	71,257	5,695,028	50,865	5,817,150	6,038,933	66,157,560	10.96
Change, 1973/1972	+1,608,691	+213,298	+1,821,979	+1,194,872	---	−13,763	+43,722	+3,701	+1,611,299	−50,641	+1,564,359	+1,594,318	+21,818,545	+0.57
Per Cent Change, 1973/1972	+20.0%	+20.9%	+20.1%	+18.2%	---	−76.6%	+0.2%	+5.2%	+28.3%	−99.6%	+26.9%	+26.4%	+33.0%	+5.2%

*Total production stockpiled.

The second major development, by Fording Coal Limited, commenced production early in 1972. This is a combined dragline and truck-shovel operation based on two large open pits, with an ultimate design capacity of 3 million long tons product coal annually. Improvement in operation of all newly commissioned large equipment was achieved during 1973, and the company increased raw coal production by some 43 per cent to 3.79 million short tons. Clean coal production of 2.39 million tons was more than double that for 1972; shortfall on Fording's export contract commitments was due largely to the railway strike and to port handling problems experienced during the latter part of 1973.

Exploration work in the East Kootenay and northeastern Foothills areas increased during 1973, with emphasis directed toward reserve development programmes, and advanced exploration and mine feasibility studies. Notable among these were operations by Kaiser Resources Ltd., Fording Coal Limited, Sage Creek Coal Limited, and Byron Creek Collieries Limited in the Fernie Basin, and by Utah Mines Ltd., Coalition Mining Limited, and Denison Mines Limited in the Carbon Creek to Quintette Mountain area of northeastern British Columbia.

At December 31, 1973, a total of 1,562 coal licences, covering approximately 900,000 acres, were held by some 32 companies or partnerships.

PRODUCTION

Production statistics, modified to indicate average and percentage comparisons are shown in Table 1. Several of the more significant factors are as follows:

1. Eighty-eight per cent of raw coal production was derived from surface mining operations, with the balance of 12 per cent from underground mines.
2. Clean coal output, which totalled 7.77 million short tons, averaged 71 per cent of total raw coal mined. This average recovery compares closely with that for 1972 (70 per cent), but differs in detail.
3. Increased minehead value for 1973 coal sales ($87.97 millions) resulted principally from increased product output, combined with average value increase of about 5 per cent.
4. About 96 per cent of total coal product output was exported to Japan. Domestic coke production, which accounted for some 3 per cent of output, represented the second largest market.
5. Of five coal-mining operations active during 1973, two companies (Kaiser Resources Ltd. and Fording Coal Limited) accounted for 99 per cent of output.

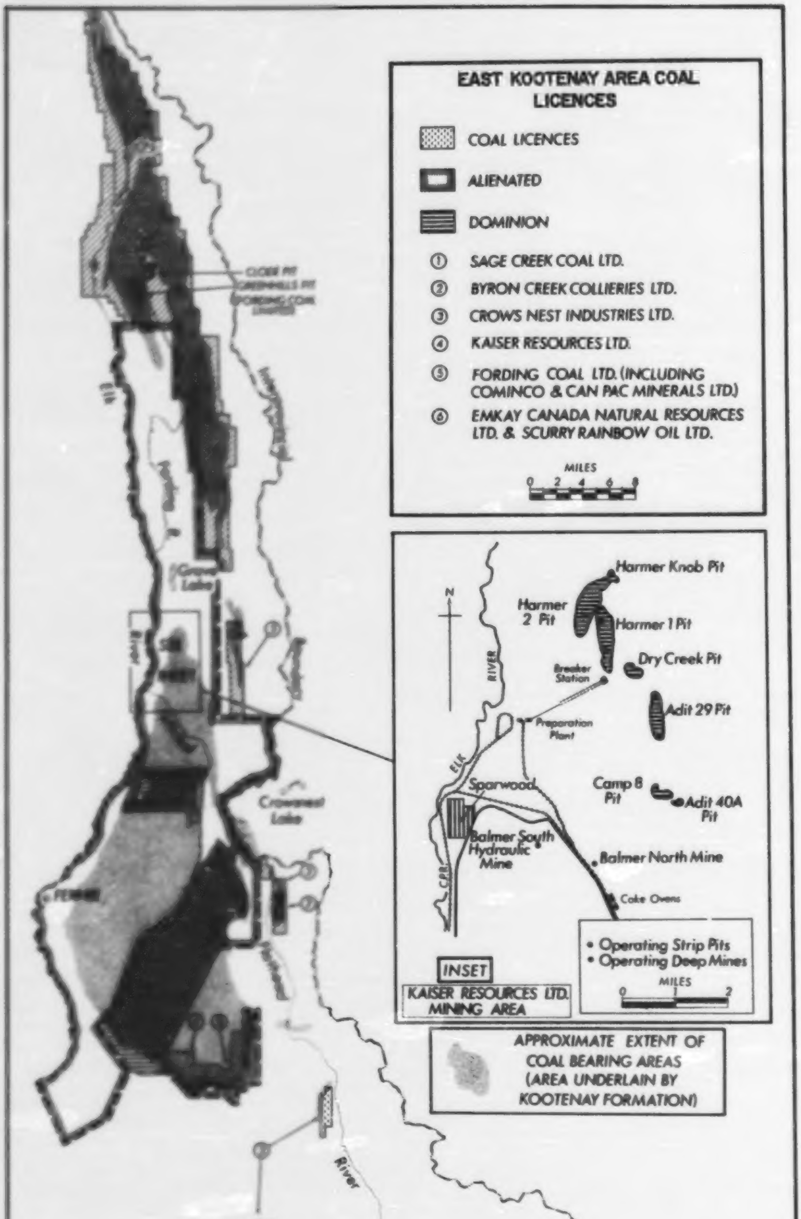
EAST KOOTENAY AREA COAL LICENCES
▨ COAL LICENCES
■ ALIENATED
▤ DOMINION
① SAGE CREEK COAL LTD.
② BYRON CREEK COLLIERIES LTD.
③ CROWS NEST INDUSTRIES LTD.
④ KAISER RESOURCES LTD.
⑤ FORDING COAL LTD. (INCLUDING COMINCO & CAN PAC MINERALS LTD.)
⑥ EMKAY CANADA NATURAL RESOURCES LTD. & SCURRY RAINBOW OIL LTD.
MILES
0
2
4
6
8
CLODE PIT
GREENHILLS PIT
FORDING COAL LIMITED
Elk
Grave Lake
River
Crowsnest Lake
FERNIE
River
N
RIVER
ELK
CPR
Harmer Knob Pit
Harmer 2 Pit
Harmer 1 Pit
Dry Creek Pit
Breaker Station
Adit 29 Pit
Preparation Plant
Sparwood
Camp 8 Pit
Adit 40A Pit
Balmer South Hydraulic Mine
Balmer North Mine
Coke Ovens
• Operating Strip Pits
• Operating Deep Mines
MILES
0
1
2
INSET
KAISER RESOURCES LTD. MINING AREA
APPROXIMATE EXTENT OF COAL BEARING AREAS (AREA UNDERLAIN BY KOOTENAY FORMATION)

Figure 53. Fernie Basin: geology and coal licences.

REPORTS ON COAL MINES

EAST KOOTENAY INSPECTION DISTRICT

By R. W. Lewis and G. L. Bell

Total coal production from the East Kootenay District during 1973 was 7,772,070 short tons of clean coal, an increase of 1,207,080 tons over the previous year. Kaiser Resources Ltd. and Fording Coal Limited produced 5,330,848 tons and 2,390,206 tons respectively. The remaining 51,016 tons was produced by Coleman Collieries Limited from the British Columbia side of their Tent Mountain open-pit operation. Almost all coal produced in the district was transported by C P, Rail to Roberts Bank for subsequent loading and shipment to Japanese markets.

Exploration work conducted in the district during 1973 amounted to approximately $1.8 million, somewhat greater than undertaken in the previous year. Kaiser Resources Ltd. continued detailed reserves evaluation within and adjacent to the Harmer Ridge mine complex, and expanded their exploration programme in assessment of Crows Nest Industries Limited's lands in other parts of the Fernie Basin. Exploration and development work at Fording Coal Limited was directed toward extension of reserves north and south of the Clode and Greenhills open-pit mines. Rio Tinto Canadian Exploration Limited continued exploration of the Sage Creek coal deposits, and Byron Creek Collieries Limited intensified their drilling and mapping programme in anticipation of putting the Coal Mountain deposit into production in 1974. At year end, the latter company announced plans to produce open-pit 'thermal' coal for a 250,000-ton trial shipment to Ontario Hydro.

Kaiser Resources Ltd. continued to increase production in the Harmer Ridge open-pit complex, and for the second successive year, Michel Colliery produced in excess of one million tons from underground operations. Of Kaiser's total raw coal production of 7.00 million short tons, surface mining accounted for some 5.76 million tons (82.4 per cent) compared to some 1.24 million tons (17.6 per cent) mined underground. Almost all coal produced was treated at the Elkview preparation plant, with only sufficient coal being directed to the Michel plant to keep the by-product plant in operation. Fording Coal Limited increased 1972 production by some 43 per cent to 3.79 million short tons of raw coal, which after treatment yielded 2.39 million tons of cleaned product coal. Mining operations continued throughout the year in the Greenhills dragline pit and the Clode truck-shovel pit, and gradual improvement in operation of all newly commissioned large equipment was achieved. Stabilization of the mine work force also improved during 1973.

SAGE CREEK COAL LIMITED (Fig. 53, No. 1)

LOCATION: Lat. 49° 06′ Long. 114° 34′ (82G/2E)
In the lower Flathead Valley; property is situated on Cabin Creek, approximately 2 miles upstream from its junction with the Flathead River.

LICENCES: CL Nos. 374 to 411, 986 to 989, 1880 to 1886 held by Sage Creek Coal Limited; CL Nos. 603 to 605 held by Crows Nest Industries Limited.

OPERATOR: RIO TINTO CANADIAN EXPLORATION LIMITED, 120 Adelaide Street West, Toronto, Ont.; R. A. Benkis, Geologist, Special Projects.

DESCRIPTION:

Kootenay Formation rocks underlie a comparatively narrow arcuate east-dipping outcrop belt along the easterly side of the Howell Creek structure, and are terminated on the northeast by the Harvey fault. Locally, as many as five seams of mineable thickness occur throughout the Kootenay sequence. Within the subject prospect, their structural attitude indicates a comparatively uniform dip-slope profile amenable to strip-mine operation. To the south of Cabin Creek, structural continuity is broken by several closely spaced normal faults of relatively small displacement, which, however, may not seriously affect extraction by open-pit methods.

Aggregate thickness of the three commercial seams is approximately 100 feet. The coal is medium volatile bituminous, with average proximate analysis of 68 per cent fixed carbon, 23 per cent volatiles, 9 per cent ash, and 0.5 per cent sulphur, with FSI 6, and calorific value of 14,000 Btu per pound.

WORK DONE:

Approximately 5 miles of roads was constructed to gain access to adit and drilling sites on CL Nos. 374, 375, 392, 393, 396, and 989. Six adits, with a total length of 2,119 feet, were driven and bulk-sampled. Twelve rotary holes, with aggregate total depth of 6,700 feet, were drilled and logged. Detailed surface geological mapping and adit mapping were completed.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 626.

BYRON CREEK COLLIERIES LIMITED (Fig. 53, No. 2)

LOCATION: Lat. 49° 30′ Long. 114° 40′ (82G/10E)
On Coal Mountain, extending approximately 3 miles south of Corbin.

LICENCES: Lots 6997 and 6999 (private coal lands).

OWNER: BYRON CREEK COLLIERIES LIMITED, Box 270, Blairmore, Alta.; E. Fabro, Vice-President and General Manager; V. H. Johnson, Consulting Geologist.

DESCRIPTION:

Kootenay Formation coal seams occur in complex multiple synclines controlled by folded reverse faults and imbricate slices. There are at least two seams of mineable thickness which are commonly intensely deformed and abnormally thickened. Underground mining, which was undertaken during the period 1908 to 1935 was generally unsuccessful because of structural problems, and susceptibility of the coal to spontaneous combustion. Within the prospective open-pit area being developed, the main seam is reported to thicken to as much as 300 feet, and it appears probable that considerable tonnage of 'thermal' coal may be developed within parts of the deposit.

WORK DONE:

Forty-seven diamond core holes, totalling 19,280 feet, and four reverse-circulation rotary holes, with aggregate depth of 1,265 feet, were drilled respectively by Canadian Longyear and McAuley Drilling Limited. Geological mapping at scale 1 inch equals 400 feet was completed and the property was flown for detailed photo-topographic mapping.

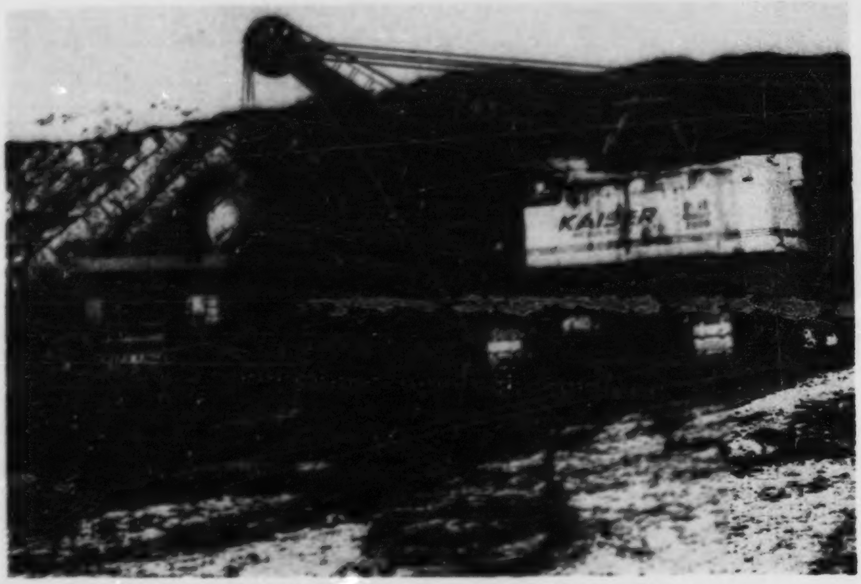

Plate XXIVA. Harmer Ridge: Open-pit operations showing 25-yard shovel loading raw coal into 100-ton truck. (*Courtesy Kaiser Resources Ltd.*)

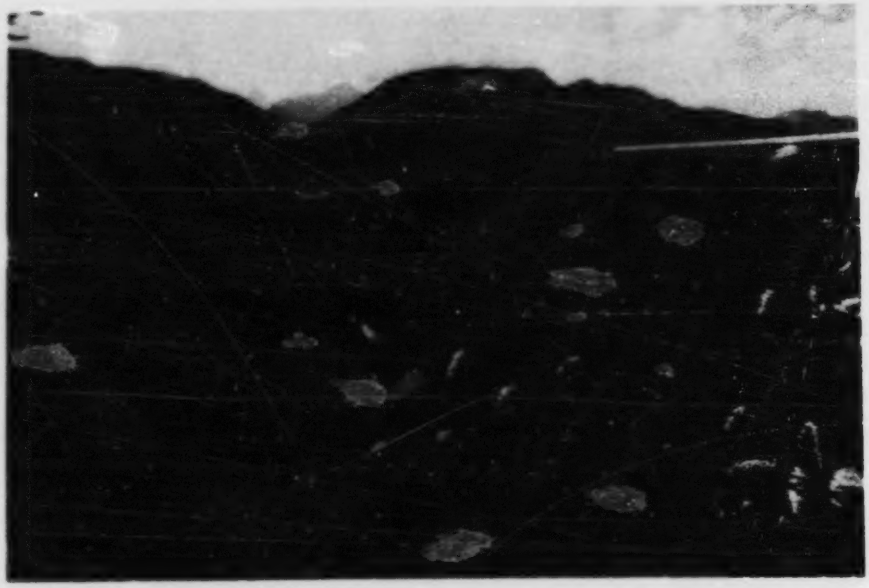

Plate XXIVB. Sparwood: Elkview preparation plant – cleaned coal is loaded into unit trains from the storage silos at left centre of photograph. (*Courtesy Kaiser Resources Ltd.*)

Road rehabilitation work included installation of new culverts and 'water-bars' to handle snow melt and spring run-off.

DEVELOPMENT: The company is currently engaged upon mine planning and open-pit design, with the intention of going into production in the latter half of 1974 on the basis of an initial 250,000-ton contract with Ontario Hydro. Development proposals include hauling the pit-run coal to a screening plant situated at the northeast corner of Lot 6999 (site of the original Corbin Collieries preparation plant), where it will be sized and dry-cleaned. The product will then be trucked approximately 13 miles to a new rail spur at McGillivray Loop, and stockpiled for subsequent shipment by C P Rail.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 627.

KAISER RESOURCES LTD. (Fig. 53, No. 4)

LOCATION: Lat. 49° 45' Long. 114° 45' (82G/10, 15)
Michel and Harmer Ridge areas, adjacent to Highway 3.

LICENCES: Lots 4588 and 4589 (private coal lands); CL Nos. 160 to 263, 500 to 506, and 564 to 571.

OWNER: KAISER RESOURCES LTD., Box 2000, Sparwood; R. W. MacPhail, Vice-President and General Manager; W. J. Riva, Vice-President, Mining Operations; L. W. Riffel, Superintendent, Pit Operations; D. E. Bodie, Superintendent, Maintenance; A. W. Grimley, Superintendent, Underground Mining; L. J. Lindsay, Superintendent, Coal Processing.

DESCRIPTION:

Kaiser Resources Ltd.'s lands contain the major coal reserves of the Fernie Basin. The Kootenay Formation, which attains a thickness of about 2,200 feet, underlies the entire basin and outcrops along a prominent peripheral escarpment below Blairmore conglomerates, terminating northward in a broadly synclinal pitch culmination in the Michel Creek area. Here, the Kootenay contains up to 10 mineable seams, ranging in thickness from 5 feet to 55 feet, with aggregate coal thickness in excess of 150 feet.

Currently, only the north end of the basin is under active development. This includes the Harmer Ridge open-pit complex, the South Balmer hydraulic mine, and the North Balmer underground mine. All extraction is from the No. 10 (Balmer) seam, which averages about 50 feet in thickness.

Development in the Harmer Ridge area is in a broad, mildly deformed upper thrust plate on the east limb of the syncline. Dip of the Balmer seam within the pit flattens westward and southward from about 20 degrees. Minor fault repetition occurs within the pit, and substantial displacement along the West Harmer normal fault limits the westerly extent of current pit operations.

The 'main block' reserves of the Adit 29 and Camp 8 area have a similar configuration, whereas those of the Camp 40 area to the east are in the underlying plate of Kootenay Formation, and the sequence is generally more deformed, with multiple repetition by low-angle thrust faults.

The South Balmer hydraulic mine is situated at the north end of Sparwood Ridge, in the west limb of the syncline. Within the hydraulic development area, which extends up-dip from the previous underground workings, dip of the Balmer seam is 35 degrees to 45 degrees northeast, with maximum cover of about 800 feet.

WORK DONE:

During 1973, the company continued to mine the open pits on Harmer Ridge and the two underground mines at Michel. Most of the Harmer Ridge production was derived from the Harmer No. 1, Adit 29A, and Adit 40A open pits, whereas the bulk of the underground coal was produced from the South Balmer hydraulic mine. The raw coal was processed at the Elkview preparation plant, and loaded there into unit trains for dispatch to the Roberts Bank port terminal. The by-product plant at Michel continued to produce coke, 'breeze,' and coal tar throughout 1973. Work continued in exploration, development, and land reclamation during the year.

OPEN-PIT MINING: L. M. Dwarkin, Chief Mine Engineer; J. B. Murphy, Chief Geologist.

Production from individual open pits situated within the Harmer Ridge mine complex was as follows:

Pit	Rock Stripped broken cubic yards	Metallurgical Coal Produced tons	Steam Coal Produced tons
Harmer 1	2,737,791	2,676,000	146,104
Harmer Lobe	9,240	122,375	—
Harmer 2	11,192,222	110,897	44,954
Adit 29A	22,325,628	1,612,441	30,593
Adit 29W	144,879	—	—
Camp 8	—	27,817	—
Adit 40A	2,426,692	1,071,167	86,292
Adit 40B	516,876	—	—
Totals	39,353,328	5,620,697	307,943

In the Harmer No. 1 pit, dragline stripping was completed by year-end, and the Page 56-cubic-yard dragline was dismantled for transfer from the property. Part of Harmer 1, and all remaining pits, were worked by truck-shovel method. Average strip ratio for total coal produced was 6.64:1 and for metallurgical coal only was 7.0:1.

Total rock production drilling was 1,363,264 feet. Total explosives of 15,904 tons, including 10,840 tons of AN/FO and 5,064 tons slurry, were used for breakage.

One 15-yard shovel, three 200-ton trucks, five 100-ton trucks, and two 834 wheel dozers were added during the year. Principal equipment in use at year-end was: one 54-yard dragline, four 25-yard shovels, three 15-yard shovels, two 10-yard shovels, five 60-R drills, one 45-R drill, twenty 200-ton trucks, twenty-eight 100-ton trucks, four front-end loaders, and twenty-two track and wheel dozers.

DEVELOPMENT AND EXPLORATION GEOLOGY: Pit mapping, quality control, and reserve forecasting procedures in the Harmer Ridge development area included results of 51 drill holes, totalling 12,805 feet, and completion of three adits, with total drivage of 597 feet. One 1,200-foot hole was drilled in location of a new access tunnel at the South Balmer hydraulic mine.

Exploration assessment, including detailed geological mapping, was expanded during 1973, with work in the Greenhills, Coal Creek Pass, Lodgepole Creek, Burnt Ridge, Taylor Mountain south, Marten Ridge, Tent Mountain, and Sparwood Ridge areas. Fifteen adits driven for bulk sampling of seams in the Greenhills, Burnt Ridge, and Lodgepole Creek prospect areas totalled 2,243 feet. Twelve and one-third miles of new roads was constructed, and 101 miles of existing roads improved.

RECLAMATION AND ENVIRONMENTAL CONTROL: Slash disposal and clean-up were carried out in the Harmer Ridge and Wheeler Ridge areas, and included 8 miles of road clearing in the Leach Creek to Marten Ridge area and 1 mile of road work in the Burnt Ridge prospect.

Reclamation procedures were undertaken in the following areas: Erickson pit, 30 acres, resloping, seeding, planting; Baldy pit, 15 acres, seeding, planting; Michel surface refuse pile, 2 acres, seeding, planting; McGillivray pit, 26 acres, seeding, planting; Michel refuse pile, 6 acres, planted; Elkview A and B Lagoons, 25 acres, planting; hydroseeding, 53 acres; C seam, 14 acres, site preparation; Lower C seam, 6 acres, site preparation; D seam, 3 acres, site preparation; Harmer Knob, 20 acres, site preparation; total, 200 acres.

The site assessment research programme to correlate survival of grass and tree species to site factors was continued. Seeds of eight shrub species were collected and stored for future use.

ELKVIEW PREPARATION PLANT: L. J. Lindsay, Superintendent.

Raw coal from the Harmer open-pits and the two underground mines was broken to 4 by 0 size range, and stored in four silos of 8,000 tons total capacity. The coal was then moved by conveyor into the preparation plant where it was divided into four size ranges for treatment. The 4 by 3/8-inch coal was treated in heavy media vessels, the 3/8 by 28 mesh in heavy media cyclones, the 28 by 100 mesh in hydrocyclones, and the minus 100 mesh was treated by flotation.

The clean minus 3/8-inch coal was dried in a fluid bed thermal dryer, and added to the clean coarse product for storage in four silos of 60,000 tons total capacity. Unit trains were loaded from the base of the clean coal silos.

Coarse refuse from the plant was hauled by scrapers to the spoil area where it was layered and compacted. The minus 28 mesh tailings were fed into lagoons for dewatering.

The preparation plant operated in a very satisfactory manner throughout the year. Daily throughput of approximately 25,000 tons yielded about 20,000 tons of clean coal product, meeting current market specifications of 9.5 per cent ash, 8 per cent moisture, and minimum FSI 6.

MICHEL COLLIERY: A.W.T. Grimley, Mine Manger; J. Anderson, Assistant Mine Manager; W. Davey, Superintendent, Balmer Hydraulic Mine; H. Eberts, Superintendent, Balmer North Mine; A. Webster, Safety Co-ordinator; G. Lancaster, Superintendent, Surface Operations.

The colliery is situated at Michel, on the Crowsnest Branch of the Canadian Pacific Railway, 24 miles east of Fernie. The colliery comprises two mines, developed in the No. 10 (Balmer) seam.

Both underground mines were regularly inspected during the year, and throughout 1973 all report books kept at the mines, in accordance with the provisions of the *Coal Mines Regulation Act*, were examined and found in order.

To dilute coal dust, 2,172 tons of crushed limestone dust was used for application to the roof, ribs, and floor of the roadways in both mines. A further substantial tonnage of limestone dust was also used in the building of stoppings against worked-out areas of the mines. Monthly mine dust samples were collected from both mines and analysed in the laboratory. All the samples were above the minimum requirement of incombustible content.

Monthly examinations were made by the Miners' Inspection Committee at both underground and surface operations. Regular monthly meetings were held at the company offices by the inspection and safety committee, in accordance with the provisions of Section 21 of the *Coal Mines Regulation Act*.

BALMER NORTH MINE: This mine is situated on the north side of the valley. The seam is approximately 50 feet thick, dips 20 degrees in a southwesterly direction, and contains good quality low volatile coking coal.

The method of working the seam in this mine is by mechanized room development and partial pillar extraction. A panel system is used, with the main multiple entries being driven against the hangingwall of the seam and in the direction of strike of the seam. The method of work has been adequately described in former Annual Reports of the Minister of Mines and Petroleum Resources, and there was no change in the method or the equipment used during 1973. For the most part of the year the mine was equipped for production from three completely separately ventilated panels. However, because of acute manpower shortage, machine utilization and mine production fell considerably below the normal expected level.

Ventilation is by a Joy electrically driven 400-horsepower exhausting fan, providing the mine with approximately 275,000 cubic feet per minute of ventilation. A 600-horsepower diesel standby drive is available to operate the mine fan in the event of an interruption to the power supply. During cold winter months, two Joy 100-horsepower forcing fans are used, in conjunction with mine air heaters, to safeguard against freezing problems in the two main intake rock tunnels serving the mine.

Total production from the mine during 1973 was 356,232 tons.

SOUTH BALMER HYDRAULIC MINE: The mine is situated on the south side of Michel Creek. The Balmer seam here is approximately 50 feet thick, dips approximately 45 degrees northeast, and yields a low volatile good quality coking product.

The system of working the seam is described as hydraulic panel, with the main entries and sublevels being driven to the rise at about a 7-degree inclination. The system of hydraulic mining has been adequately described in previous Annual Reports of the Minister of Mines and Petroleum Resources, and there was little change in either the system or the equipment used during 1973. The only change that occurred during the year was in the mode of transportation of development coal from the working face outbye to the mine dewatering station. The shuttlecars formerly delivered the development coal onto a trunk belt conveying system, whereas during 1973 this coal was transported out of the mine by hydraulic flumes.

During the year a major development roadway in rock was driven from outside to connect with and facilitate development of the No. 5 panel. This work was done by Harrison Rock and Tunnel Company Limited, Vancouver.

The mine is divided into two completely separate ventilation sections, each being ventilated by 100-horsepower Joy axivane forcing fans, supplying the mine with approximately 220,000 cubic feet per minute of ventilation. Total production from the mine during 1973 was 913,614 tons.

MICHEL BY-PRODUCT PLANT: G. Lancaster, Superintendent; T. Melville, Foreman.

During 1973, 159,830 tons of coke and 759,239 gallons of coal tar were produced.

MICHEL PREPARATION PLANT: G. Lancaster, Superintendent.

Coal is hauled to the plant by truck from the mine and dumped into storage silos, thence it is moved by belt conveyors to the plant where it is sized and screened. The minus ¼-inch size range is diverted to storage bins and then used in the by-product plant for the production of coke and coal tar. The above ¼-inch size range is loaded for commercial use, or transported for treatment to the Elkview coal preparation plant.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 629

CROWS NEST INDUSTRIES LIMITED (Fig. 53, No. 3)

LOCATION:	Lat. 49° 56'	Long. 114° 46'	(82G/15)
	On ridge west of Line Creek, a tributary of Fording River.		
LICENCES:	CL Nos. 294 and 295.		
OWNER:	CROWS NEST INDUSTRIES LIMITED, Box 250, Fernie; J. J. Crabb, Vice-President, Exploration.		

DESCRIPTION:

Up to 11 lower Kootenay Formation coal seams of mineable thickness underlie Line Creek ridge, which forms the west limb of the Fording River syncline in this area. General configuration is a comparatively simple, progressively flattening dip-slope deposit; however, seam deformation and thickening occur toward the easterly side in the vicinity of the synclinal axis, and the section is apparently fault-terminated along the west side of Line Creek.

WORK DONE:

Eleven drill holes, totalling 1,932 feet, were completed during October and November 1973. Reclamation work included road maintenance and seeding of test pits Nos. 9 and 10.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 633.

FORDING COAL LIMITED (*Fig. 53, No. 5*)

LOCATION: Lat. 50° 12′ Long. 114° 52′ (82J/2W)
The property is situated in the upper Fording Valley, approximately 30 miles north of Sparwood.

LICENCES: Seventy-five coal licences owned by Fording Coal Limited and Canpac Minerals Limited.

OWNERS: Fording Coal Limited, Canpac Minerals Limited, and Cominco Ltd.

OPERATOR: FORDING COAL LIMITED, Box 108, Sparwood (managed by Cominco Ltd., Trail); R. M. Porter, President; O. I. Johnson, Manager, J. B. Donald, Superintendent, Mining; M. Malnarich, Assistant to the President and Superintendent, Processing; G. W. Lee, Superintendent, Shops and Services; J. R. Greenhalgh, Acting Mine Production Superintendent; G. R. Parry, Mine Engineer; A. C. Taplin, Senior Mine Geologist; T. S. Mathieson, Supervisor, Administrative Services.

DESCRIPTION:

Kootenay Formation coal seams occur in two broad north-trending synclines, situated one on either side of the Fording River, which is the locus of the regional west-dipping Erickson fault. Ten seams of significant thickness are present in the currently developed mine areas located on the east limb of the Greenhills syncline (Greenhills pit) and west limb of the Eagle Mountain syncline (Clode pit). The latter structure is complicated by a flat-lying thrust fault in the lower slope of Turnbull Mountain, resulting in repetition of the lowest seam ('Repeat 4' pit). Plant site elevation in the valley bottom is 5,500 feet, with coal outcrop in the Eagle Mountain section ranging up to 7,300 feet.

WORK DONE:

Production from the Greenhills dragline pit and the Clode truck-shovel pit continued throughout the year. The 'Repeat 4' pit, situated below and at the northern extremity of the Clode pit area, was completed and worked out by February 1973. Development drilling and reserve assessment work continued throughout the year.

EXPLORATION AND DEVELOPMENT: An extensive drilling, mapping, and sampling programme to verify reserve requirements and provide data for long-term mine planning, was commenced in May and carried on until late in the year. Detailed work, which was concentrated on the west shoulder of Turnbull Mountain, the west face of Eagle Mountain, and the north and south extensions of the Greenhills pit area, included 8,092 feet of core and 26,566 feet of rotary drilling, and approximately 82,000 lineal feet of trenching and seam mapping. Small reconnaissance drilling programmes were conducted on Henretta Mountain and on Brownie Creek, situated respectively 4 miles north-northeast and 2.25 miles east of the treatment plant site.

Results of the Turnbull Mountain programme indicate northward extension of a flat-dipping thrust fault similar to that noted in the 'Repeat 4' pit; despite this structural complexity, several potential pit areas are indicated. On Eagle Mountain, drilling confirmed down-dip continuity of seams 4 to 13, providing data for southward extension of the Clode pit area. Thickening and structural repetition of B and D seams were noted on the west side of the Erickson fault, indicating somewhat greater reserve potential in the South Greenhills extension area.

MINE PRODUCTION: Employees increased from 111 staff and 501 general on December 31, 1972 to 135 staff and 549 general on December 31, 1973, a total at year-end of 684 employees.

A special Mine Projects Group was established to study long-term mine planning requirements. Golder Brawner and Associates inspected and reported quarterly on the Clode spoil dump stability, and generally endorsed operating and monitoring techniques used.

CLODE CREEK PIT (including 'Repeat 4'): Mining continued down to the 6500 bench during the year. Quantities excavated were as follows: waste, 10,898,140 cubic yards; metallurgical coal, 1,623,615 long tons; oxidized coal, *nil.* Average strip ratio was 6.7:1 (cubic yards to long tons). The 'Repeat 4' pit was completed in February.

GREENHILLS PIT: Continued dragline production yielded the following: waste (including rehandle), 4,134,696 cubic yards; metallurgical coal, 1,635,830 long tons; oxidized coal, *nil.* Average strip ratio was 2.52:1.

SUMMARY OF MINE QUANTITIES: *Material quantities:* waste, 15,032,836 cubic yards; metallurgical coal, 3,259,445 cubic yards; oxide coal, *nil;* total, 18,292,281 cubic yards. *Blasting agents consumed:* bulk AN/FO, 10,64,9694 pounds; bulk slurry, 4,229,710 pounds.

PROCESSING: Statistics for the year are as follows: raw coal treated, 3,501,062 long tons; cleaned coal produced, 2,206,151 long tons; cleaned coal shipped by rail, 2,118,827 long tons; average analysis of product (air dried): ash, 8.8 per cent; volatile, 22.4 per cent; fixed carbon, 67.9 per cent; sulphur, 0.33 per cent; FSI, 6.

TOWNSITE: During the year a further 50 homes were started on a newly serviced 70-lot subdivision. A 30-unit apartment, 40-lot mobile home subdivision, and a commercial development, containing a shopping mall and 20-room hotel were started during 1973 and were well advanced at year-end.

Single accommodation is available for 416 men. Married accommodation included 176 detached homes, 158 privately owned mobile homes, and 14 company-owned mobile homes.

NORTHERN INSPECTION DISTRICT

By G. L. Bell and D.I.R. Henderson, except as noted

McINTYRE PORCUPINE MINES LIMITED
(MONKMAN PASS PROPERTY) (Fig. 54)

LOCATION:	Lat. 54° 45' Long. 120° 30' (93I/8, 9, 10, 15) Along the eastern foothills of the Rocky Mountains between the Narraway River and Kinuseo Creek.
LICENCES:	CL Nos. 1158 to 1162, 1165 to 1195, 1197, 1198, 1200 to 1259, 1261, 1262, 1267, 1272, 1286.

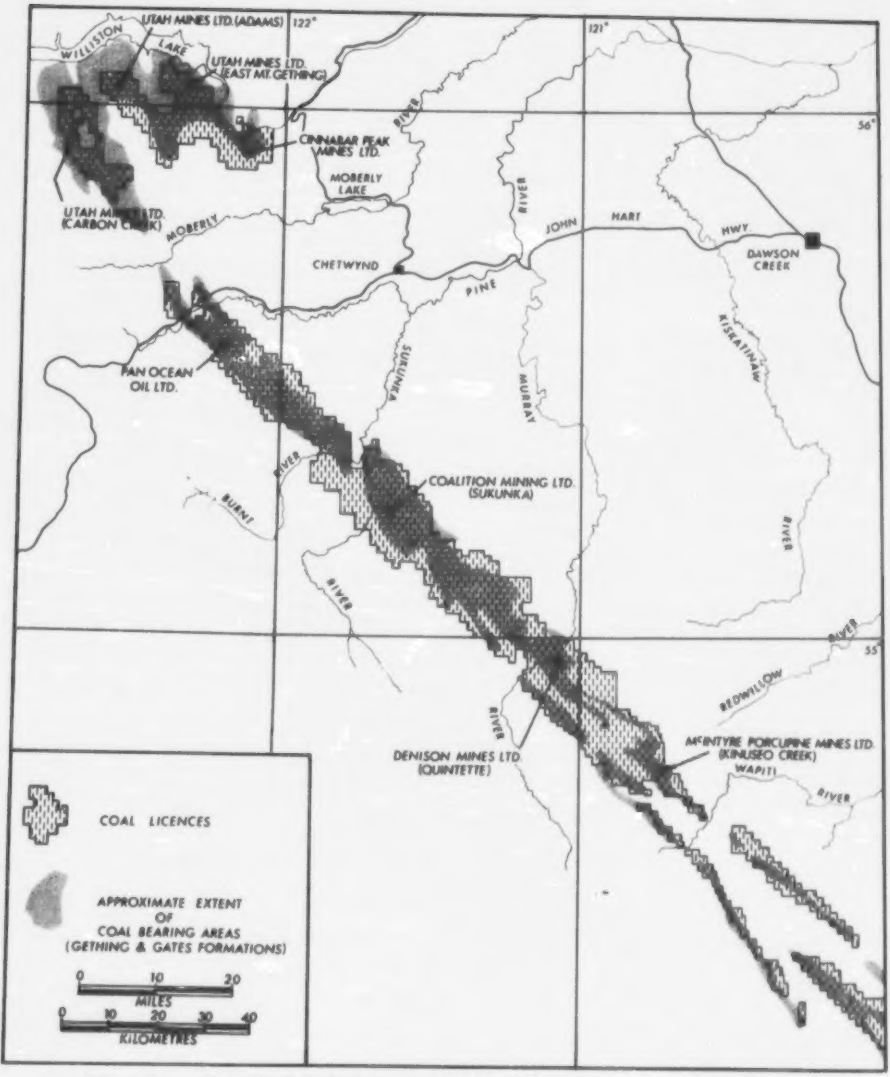
UTAH MINES LTD.(ADAMS)
122°
121°
WILLISTON
LAKE
UTAH MINES LTD.
(EAST MT. GETHING)
CINNABAR PEAK
MINES LTD.
RIVER
56°
MOBERLY
LAKE
RIVER
UTAH MINES LTD.
(CARBON CREEK)
MOBERLY
JOHN
HART
HWY
DAWSON
CREEK
CHETWYND
PINE
PAN OCEAN
OIL LTD.
SUKUNKA
MURRAY
KISKATINAW
RIVER
COALITION MINING LTD.
(SUKUNKA)
BURNT
RIVER
RIVER
RIVER
55°
REDWILLOW
RIVER
DENISON MINES LTD.
(QUINTETTE)
McINTYRE PORCUPINE MINES LTD.
(KINUSEO CREEK)
WAPITI
RIVER
COAL LICENCES
APPROXIMATE EXTENT
OF
COAL BEARING AREAS
(GETHING & GATES FORMATIONS)
0
10
20
MILES
0
10
20
30
40
KILOMETRES

Figure 54. Foothills Belt, Northeastern British Columbia: geology coal licences.

OWNER: McINTYRE PORCUPINE MINES LIMITED, Box 51, Commerce Court West, Toronto, Ont.; field office, Box 2000, Grand Cache, Alta.; D. L. McKelvie, Chief Geologist, Coal Division.

DESCRIPTION: The licence blocks cover narrow linear belts of Lower Cretaceous rocks of the inner foothills, extending some 47 miles northwest-southeast, from Kinuseo Creek to Narraway River. Coal-bearing strata of the Gething and Gates Formations are variably exposed across northwesterly trending *en echelon* folds cut by southwesterly dipping thrust faults.

WORK DONE: Extensive trenching and helicopter-supported reconnaissance geological mapping were carried out during the year. Approximately 15 miles of access roads was completed.

• DENISON MINES LIMITED (QUINTETTE PROJECT) (Fig. 54)

LOCATION: Lat. 54° 55′ Long. 121° 03′ (93I/14, 15)
Along the foothills front between Bullmoose Creek and Kinuseo Creek, about 60 miles south-southeast of Chetwynd.

LICENCES: CL Nos. 1303 to 1427, 1887 to 1907, 2174 to 2191, 2464 to 2489, 2607 to 2669.

OWNER: Quintette Coal Ltd. (joint venture agreement with World Resources Company).

OPERATOR: DENISON MINES LIMITED (Coal Division), 1500, 444 Fifth Avenue SW., Calgary, Alta.; D. M. Parkes, Chief Engineer; A. A. Johnson, Chief Geologist; G. P. Gormley, Project Manager.

DESCRIPTION:

The Quintette joint-venture project covers an extensive licence group straddling the coal-bearing Lower Cretaceous belt of the inner foothills, extending some 15 miles both northwest and southeast of Murray River. Potentially economic seams which occur in the Upper Gething Formation and middle part of the Gates Member (Commotion Formation) underlie five main prospect areas of varying structural complexity: Babcock, Wolverine North, Five Cabin Syncline, Wolverine South, and Quintette. All coal is medium volatile bituminous, with excellent coking and cleaning characteristics. Reserves outlined to date indicate major underground and limited open-pit mining potential.

WORK DONE:

Detailed geological mapping of the Waterfall Creek syncline, situated on the southwest flank of Babcock Mountain, was commenced in August. Nine diamond-drill holes were spotted on targets defined in the mapping programme, and a total of 9,656 feet HQ core hole was logged with combined gamma-neutron and density-caliper instrumentation. Limited trenching was used to expose seam sections in overburden areas. Approximately 10 miles of limited-use road was constructed from Grizzly Valley access road to the Murray camp, and some 15 miles of drill and trench access roads were constructed on the licences.

Studies relating to feasibility of hydraulic mining in the Waterfall Creek syncline area have been initiated.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 639.

COALITION MINING LIMITED (Fig. 54)

LOCATION: Lat. 55° 14' Long. 121° 38' (93P/4E)
Sukunka River area, 36 miles south of Chetwynd, on the west slope of Bullmoose Mountain.

LICENCES: CL Nos. 1062 to 1066, 1069 to 1102, 1153, 1154.

OWNER: National Trust Company Limited.

OPERATOR: COALITION MINING LIMITED, 1103, 1177 West Hastings Street, Vancouver; N. E. Roberts, Operations Manager; J. Burns, Mine Manager; G. R. Jordan, Project Geologist.

DESCRIPTION:

The Coalition deposit occurs in high relief foothills terrain east of the Sukunka Valley. Two seams of medium volatile, low ash metallurgical coal occur in the Upper Gething sequence. The lower and upper seams, termed respectively 'Chamberlain' and 'Skeeter' each average about 8 feet in thickness and are separated from each other by some 20 to 40 feet of thin-bedded siltstone and laminite. Good seam continuity occurs throughout the area investigated.

Regionally, the prospective mine area lies in a mildly deformed block situated west of the Bullmoose fault complex, a zone of steeply dipping reverse faults and tightly compressed northwesterly trending folds. The prospective block has been cut into three broad plates by two main low-angle thrust faults of moderate displacement. Within each plate the strata are flat lying, or only mildly flexured; however, considerable slippage and small-scale thrust faulting are comparatively frequent, particularly near the top of the Chamberlain seam, and within the interseam sedimentary rocks.

Lack of seam partings, exceptionally low ash content, and good FSI values enhance the value of this coal for metallurgical purposes.

WORK DONE:

The trial mining programme which commenced in 1972 was continued; total drivage was 9,200 feet, and when mining ceased in October 1973, each entry had been advanced approximately 2,500 feet into the Chamberlain seam. Coal produced and stockpiled amounted to 32,674 tons. At year end the mine was being maintained on a 'caretaker' basis to prevent flooding of the workings.

Two test adits, totalling 300 feet of drivage, were completed in the Skeeter seam, and one diamond-core hole (220 feet) was drilled. Detailed underground mapping of the Chamberlain seam was completed by McElroy & Associates.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 640.

UTAH MINES LTD. (CARBON CREEK PROJECT) (Fig. 54)

LOCATION: Lat. 55° 58' Long. 122° 43' (93O/15E)
Along the Carbon Creek drainage basin extending southeastward from Williston Lake to Beattie Peaks.

LICENCES: CL Nos. 1736 to 1790, plus 10 Crown-granted lots.

OWNER: UTAH MINES LTD. (and BURNS FOUNDATION LTD.), 412, 510 West Hastings Street, Vancouver; D. S. Fullerton, District Geologist.

DESCRIPTION:

The Carbon Creek coal basin is a broad, comparatively simple, northwesterly trending syncline about 8 miles in width and 20 miles in length, contained within the more severely deformed *en echelon* fold belts of the inner foothills. The Lower Cretaceous Gething Formation, which attains a maximum thickness of some 1,300 feet, contains numerous thin coal zones, which vary laterally in thickness and quality. As many as 12 potentially economic zones, containing seams exceeding 4 feet in thickness, occur principally in the upper 900 feet of the Gething sequence. Structurally, the northern part of the basin is a shallow-dipping, southeasterly plunging syncline. This relatively simple configuration is progressively complicated to the southeast by subsidiary folds, and high-angle reverse faults.

WORK DONE:

Third-year operations were concentrated in the northern and central parts of the block, covering some 40 square miles on CL Nos. 1736-1767 and CL Nos. 319-328. Drilling programme to test continuity and quality of seam Nos. 14, 15, and 31 was contracted by Canadian Longyear. Total footage of 11 HQ diamond-core holes was 6,642 feet; in addition, five holes of 6-inch diameter core were drilled for bulk sampling.

Four and three-quarter miles of new access road was completed. Reclamation procedures included slash clearance and seeding of road shoulders and drill sites.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 643.

UTAH MINES LTD. (ADAMS PROJECT) (Fig. 54)

LOCATION: Lat. 56° 03′ Long. 122° 30′ (93O/15E)
At the headwaters of Gaylord Creek, approximately 12 miles west of the W.A.C. Bennett Dam and 2 miles west of Mount Gething.

LICENCES: CL Nos. 1720 to 1735.

OWNER: UTAH MINES LTD., 412, 510 West Hastings Street, Vancouver; D. S. Fullerton, District Geologist.

DESCRIPTION: The licence area covers part of the northwesterly trending Adams syncline, which is underlain by Lower Cretaceous Gething Formation, bounded on the west side of the block by the Carbon fault.

WORK DONE: Reconnaissance mapping at scale 1:50,000 was used to locate drill sites situated approximately 2 miles apart on CL Nos. 1725 and 1727. Two diamond HQ core holes, totalling 1,656 feet, were drilled by Canadian Longyear using helicopter support. Numerous thin coal seams were found to occur in the 1,000 feet of Gething Formation penetrated, but only one of these attained a thickness of 5 feet.

PAN OCEAN OIL LTD. (Fig. 54)

LOCATION: Lat. 55° 20′ Long. 122° 00′ (93O/9E)
Headwaters of Willow Creek and Johnson Creek, approximately 20 miles west-southwest of Chetwynd.

LICENCES: CL Nos. 2686 to 2752.

OWNER: PAN OCEAN OIL LTD., 1050 Three Calgary Place, 355 Fourth Avenue SW., Calgary, Alta.

DESCRIPTION: Prospect occurs within a moderately to tightly folded and faulted belt of Gething Formation situated on the northeast limb of the Falls Mountain syncline. Medium volatile, metallurgical-grade coal occurs within the Gething in this general area.

WORK DONE: Five NQ core holes, totalling 3,321 feet, were drilled on CL Nos. 2738, 2740, and 2741.

CINNABAR PEAK MINES LTD. (Fig. 54)

LOCATION: Lat. 55° 56′ Long. 122° 08′ (93O/16E)
On Coalbed and Johnson Creeks, about 15 miles southwest of Hudson Hope.

LICENCES: CL Nos. 1019 to 1052 and 1155 to 1157.

OWNER: CINNABAR PEAK MINES LTD., 7203 – 81st Avenue, Edmonton, Alta.

DESCRIPTION: Coal seams occur within the Lower Cretaceous Gething Formation which attains a stratigraphic thickness of about 1,600 feet on both limbs and the southern end of a south-plunging anticline. Twenty seams ranging from 1.5 feet to more than 8 feet are reported. Coal in the upper part of the formation, particularly in the Trojan and Superior seams, appear to be of coking quality.

WORK DONE: Three NQ diamond core holes, totalling 1,140 feet, were drilled on CL Nos. 1030 and 1035, and limited trenching was done in the same area. The work was supervised by Halferdahl & Associates Ltd. of Edmonton.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 642.

UTAH MINES LTD. (EAST MOUNT GETHING PROJECT) (Fig. 54)

LOCATION: Lat. 56° 03′ Long. 122° 20′ (94B/1W)
Situated on the east flank of Mount Gething, between Gaylord Creek and Lake Williston.

LICENCES: CL Nos. 1651 to 1678.

OWNER: UTAH MINES LTD., 412, 510 West Hastings Street, Vancouver; D. S. Fullerton, District Geologist.

DESCRIPTION: The prospect is located on the western limb of the northwesterly trending Dunbury syncline; dips in this area are in the range of 10 degrees to 25 degrees northeast. A number of relatively thin medium-volatile bituminous coal seams occur in the Gething Formation, which attains a thickness in excess of 1,500 feet.

WORK DONE: One HQ diamond-drill hole was drilled to depth of 750 feet on CL No. 1670. A number of thin coal seams was encountered, but only one of these, provisionally correlated with the Grant seam of the Peace River canyon sequence, exceeded 5 feet in thickness.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 643.

UTAH MINES LTD. (DUNLEVY PROJECT) (Fig. 54)

LOCATION: Lat. 56° 10' Long. 122° 23' (94B/1W)
Ten miles northwest of the W.A.C. Bennett Dam, on the north side of Williston Lake.

LICENCES: CL Nos. 1648 to 1650 and 1679 to 1719.

OWNER: UTAH MINES LTD., 412, 510 West Hastings Street, Vancouver; D. S. Fullerton, District Geologist.

DESCRIPTION: The licence block covers the Dunlevy syncline area north of Williston Lake. The belt is underlain by Lower Cretaceous Gething Formation, which contains thin coaly strata generally correlative with the Peace River canyon area.

WORK DONE: One HQ core hole, to total depth 808 feet, was drilled on CL No. 1688. Although a number of coaly intervals and thin seams were penetrated, none of these exceeded 3 feet in thickness.

BULKLEY VALLEY COLLIERIES LTD. (Fig. 54)

By J. F. Hutter

LOCATION: Lat. 54° 35' Long. 127° 10' (93L/11E)
On Goathorn Creek, 7 miles southwest of Telkwa.

LICENCES: CL Nos. 164, 443 to 448, 522 to 527, 561 to 563, and 643 to 646, plus six Crown-granted lots.

OWNER: Bulkley Valley Collieries Ltd.

OPERATOR: BULKLEY VALLEY COAL SALES LTD., Box 39, Telkwa; Lloyd Gething, Manager.

WORK DONE: The mine operated intermittently during the year, with total production of 300 tons of coal. Current operations involve driving a tunnel on the south side of Goat Creek, approximately 500 feet upstream from the old bunkers, and about 30 feet above creek level. A good seam of coal, approximately 12 feet in thickness, is exposed in the face of the tunnel. Calorific value of the coal is reported to be 14,000 Btu per pound, with 10 to 12 per cent ash content. Two men are employed part time.

REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 644.

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